

AR26

A GE commitment:
more power for transportation

1971 Financial Highlights

<i>(Dollar amounts in millions; per-share amounts in dollars)</i>	1971	1970
Sales of products and services	\$9,425.3	\$8,726.7
Net earnings	\$471.8	\$328.5
Earnings per common share	\$2.60	\$1.81
Dividends declared per common share	\$1.38	\$1.30
Earnings as a percentage of sales	5.0%	3.8%
Share owners' equity	\$2,801.8	\$2,553.6
Earned on share owners' equity	17.6%	13.2%
Earnings retained for reinvestment	\$222.1	\$93.1
Plant and equipment additions	\$553.1	\$581.4

Per-share amounts have been adjusted for the two-for-one stock split in April 1971.

A special note to share owners: It is easy to assume at this time of general improvement in earnings by U.S. businesses that any problems associated with profitable performance are being solved. The fact is, however, that in 1971 the estimated after-tax profits as a percentage of sales for all U.S. manufacturing corporations approximated only 4.2%, well below the 5.6% level reached in 1966 or the 7.1% in 1950. In the 1966-71 period, total profit dollars for all U.S. corporations actually declined while U.S. Gross National Product increased 39.6% and employee compensation in the private sector rose 42.1%. This squeeze on earnings capability affects the amounts available to industry for dividend payments to share owners. It also severely limits the funds retained for reinvestment in the business—the capital needed to finance business growth and to build jobs for the expanding work force. Consequently, of the General Electric commitments described in this Annual Report, none has a higher priority for management than that of earnings improvement. This is essential not only to give share owners a more satisfactory return on their investment but also to build a volume of retained earnings that can be reinvested to keep GE competitive in serving customers, supplying jobs and contributing to social progress. To underscore your management's concern on this point, information on earnings in the financial tables of this Annual Report is printed in a boldface type.

Covers: General Electric's investments in plant and equipment to help meet the nation's need for increased productivity are illustrated by (front cover) marine propulsion systems for world shipping and by new facilities to build (back cover) complete commuter cars. Power plants for ships, illustrated at right by a Columbus Line containership in the Sydney, Australia harbor, contributed to record levels of exports by General Electric in 1971.

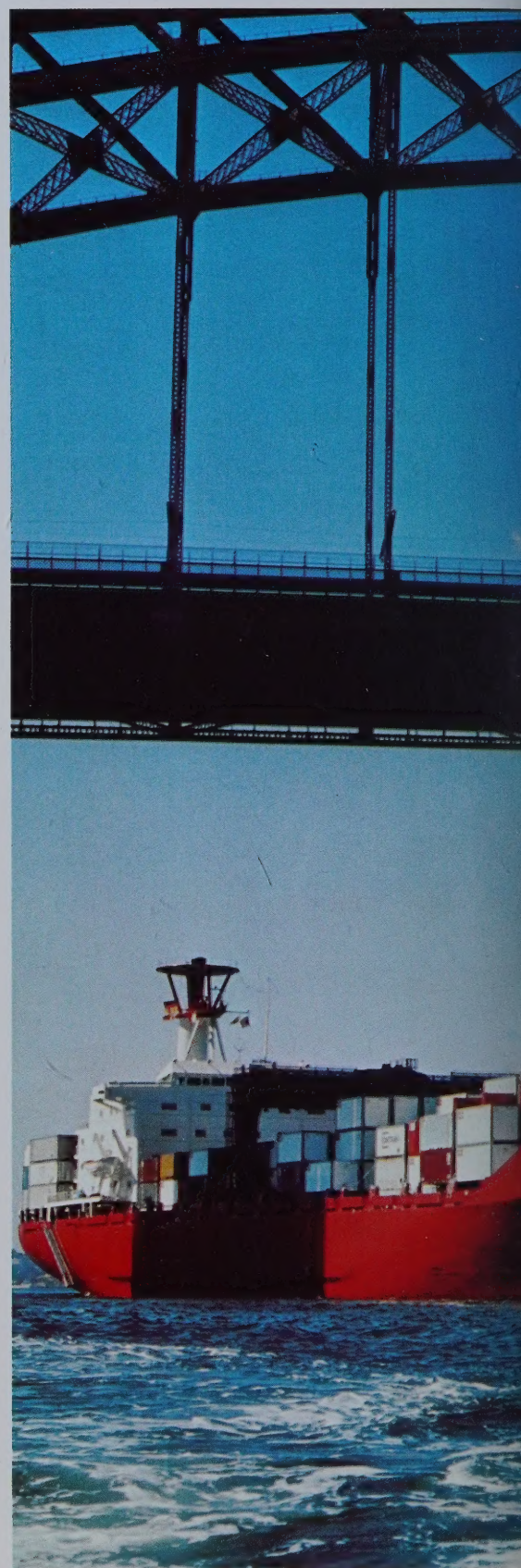
NOTE: In this Report, unless otherwise indicated by the context, the terms "General Electric" and "Company" are used on the basis of consolidation described on page 26.

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FRONT COVER: Africa's mighty Victoria Falls, broader than Niagara, with twice as deep a drop. There's a touch of General Electric—the Erie-built Zambian Railways' locomotive spanning Victoria's mist shrouded gorge. Photo by Joseph B. Brignolo.

AT RIGHT: the scope of General Electric's manufacturing capability outside the United States is suggested by production of hydro-generators at the Campinas plant of General Electric S.A. in Brazil. Photo by Walter B. Halstead.

TEXT of world trade section by J. H. Haufler and Keith H. Crandell.

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New GE views of world trade

**From Chairman Fred Borch:
the case for stronger U.S. policies to aid exports**

**From International Group's Stan Smith:
new directions for 'the GE world system'**

This issue of the *GE Investor* contains a special series of reports on the Company's international business. It is published at a time when public attention is focused on world trade as the result of President Nixon's recent measures to stimulate the American economy.

This survey constitutes the most extensive coverage of international business ever published for General Electric share owners. Even so, it still represents only an introductory survey, with highlights of some specific operations. For one thing, the largest of GE's operations outside the U.S., Canadian General Electric Company Limited, is left entirely to a future issue.

But within the space limitations, here is GE international in mid-1971: some of the people who conduct the business, their viewpoints, the resources they are applying, and the prospects they see ahead.

Two of General Electric's senior officers recently have expressed their viewpoints on several important aspects of international business. Together, their comments provide an overview for this issue of the *GE Investor*.

Fred J. Borch, chairman of the board, presented his views to the Subcommittee on International Trade of the U.S. Senate Finance Committee in Washington. Subsequently Mr. Borch commented on President Nixon's recently announced economic program to the *GE Investor*.

J. Stanford Smith, vice president and group executive of General Electric's In-

ternational Group, presented his views in six cities around the world—Sao Paulo, Mexico City, Hong Kong, Caracas, Madrid and Crotonville, N.Y.—to 600 men and women from the Company's international operations participating in the Group's 1971 worldwide management conference. To underscore the importance of international business to General Electric's future, he stressed that "Sixty per cent of the total world market for GE-type products is outside the United States, and it's a market that's not only larger but growing faster than the U.S. market."

The need for decisive action. In his testimony before the Senate's trade subcommittee, Chairman Borch described the U.S. as "badly outmaneuvered on the world trade front." He added: "I think the time has come when we can no longer view this situation with complacency. The recent currency crises, as well as a host of other indications, tell us that we cannot continue to maintain free trade unless it becomes fair as well as free."

He urged the development of a new U.S. international economic policy. The U.S. had not developed an international economic policy because the country's leaders, said Borch, "have been preoccupied, and correctly so," with other national problems. Not so with other nations: "one of their very high priorities has been the international trade situation."

Thus, said Borch, "I was encouraged by the attention paid to international trade in President Nixon's August economic message." Borch stressed that many aspects of the President's program will re-

"...trade must also be fair, with the world's trading partners competing under common ground rules."



Chairman Fred J. Borch

quire long study and analysis, but he commented on several major segments of the program for the *GE Investor*.

The suspension of dollar convertibility may encourage some nations to revalue their currency, "which can only be beneficial to the Company's already strong position in exports," said Borch.

The surcharge on imports is encouraging to those segments of GE's domestic business which have been hurt by unfair foreign competition.

Free international trade—commerce between nations with a minimum of restrictive barriers and protectionist measures—has been consistently favored by General Electric management. At the same time, the Company's leaders have emphasized that trade must also be fair, with the world's trading partners competing under common ground rules.

In his testimony before the Senate's trade subcommittee, GE's Chairman reassessed how far the trading nations have drifted from trade that is both free and fair. He called attention to the "trade distorting practices by which other governments seek to attain their international economic objectives," seeing these as "a significant cause of the U.S. declining trade balance."

While the use of tariffs charged against trade is generally well understood, Borch sees these today as a "lesser hindrance to trade." Not so well understood, however, are the many types of non-tariff barriers by which countries subtly encourage exports while discouraging imports. The Chairman analyzed the effects of some non-tariff barriers as "artificially reducing export prices" while others have the effect of "artificially raising prices of imports or flatly barring imports in order to protect domestic producers."

Borch told the *GE Investor* that "the import surcharge of ten per cent will help offset some of the practices engaged in by other trading nations." He pointed out, however, that in trying to keep its domestic businesses competitive, the Company has invested in a number of offshore manufacturing facilities for product components. These will now be subject to the import surcharge.

"The need for braking inflation at home is clear," Borch added. "While we have some serious reservations about the efficacy of wage and price controls, we recognize that decisive action was needed. We are of course cooperating with both the spirit and letter of President Nixon's wage-price program."

Borch pointed out that inflation will also be slowed by tax incentives which will enable business to improve productivity and modernize its factories. This will also stimulate export business. Action along the lines recommended to the Congress by President Nixon was urged by Borch in his Senate testimony.

Coordinating a GE world system. Stan Smith, in his talks on the International Group's six-stop Management Conference, viewed world trade in terms of opportunity—opportunity to apply GE's technological strengths to the benefit of many nations of the world, as well as opportunity for the Group to contribute to the Company's profitable growth.

"Nor should we underestimate the importance of the Company's favorable impact on the national balance of payments," he recently told the *Investor*. "The surplus from GE operations annually runs into the hundreds of millions."

One of the basic principles he emphasized to GE people around the world was that General Electric operations must be "good citizens of the countries in which we do business. General Electric sales, engineering and manufacturing operations enhance the communities and the countries of which they're a part. An individual can't do more for his nation than to help apply new technology and new business practice and thereby increase national productivity and build jobs."

The scale of opportunity in international trade, in terms of business for General Electric, is enormous. "Non-U.S. markets for GE-type products are larger and growing faster than those in the U.S., even though all of the vast international market may not be available to any given product line. But, the dimensions of world trade mean that no one in General Electric today can afford to think provincially any more. General Electric sales outside

the United States are in excess of \$1.5 billion. Obviously, a large part of General Electric's future both in sales and earnings lies in international markets."

The mission of the International Group, as Smith sees it, is "to seek out international markets and to make sure that the resources of the entire Company are marshalled to serve these markets profitably." To handle this mission, the Group is organized into five Divisions, including three Area Divisions (Europe, Latin America and the Far East), as well as the International Sales Division and the International Business Support Division. Under Smith, each of the five Divisions is in the process of change, reflecting a search for more effective and more profitable performance.

"Our sales arm used to represent only U.S. operations seeking export orders," he points out. "Now, the International Sales Division represents manufacturing companies outside the U.S. as well. Also, it has rebuilt its field sales organization along the successful lines of U.S. pooled sales operations, and is locating more sales engineers overseas, closer to where the action is. The International Sales Division is, incidentally, heading for its third consecutive record year in export sales."

As to the three Area Divisions, the principal effort has gone into clarifying their responsibilities—particularly in overseeing operations of the affiliates assigned to them. "The International Group is responsible for the profitable performance of 34 manufacturing operations in 19 nations. As an indication of the job the Area Divisions are doing, virtually all of the Group's companies were profitable in 1970, and most were mighty healthy."

In another major organizational change, Smith established the International Business Support Division to provide pooled licensing and patent services, supply staff support and to assume leadership in overseas business planning. "The Division has done much," he comments, "to tighten liaison within the Group and with other Groups of the Company."

Other changes encourage more of a worldwide view by General Electric people. Smith: "We've put such measure-

ments as cost performance on a world comparison basis. Every country in which we operate talks about increasing exports, but talking about exports is an idle dream unless you have worldwide cost leadership for the quality of products that customers want. We say to each General Electric operation 'If you can achieve world cost leadership, the International Sales Division will help you achieve world market leadership'."

His most emphatic projection of this world view is in terms of personal opportunity. "I told every audience on our world tour that the International Group has no jobs reserved for Americans, or Brazilians, or Spaniards, or Italians, or Mexicans. We want the man or woman who is best qualified for each assignment regardless of the country from which he or she comes. Key assignments must be open to worldwide competition."

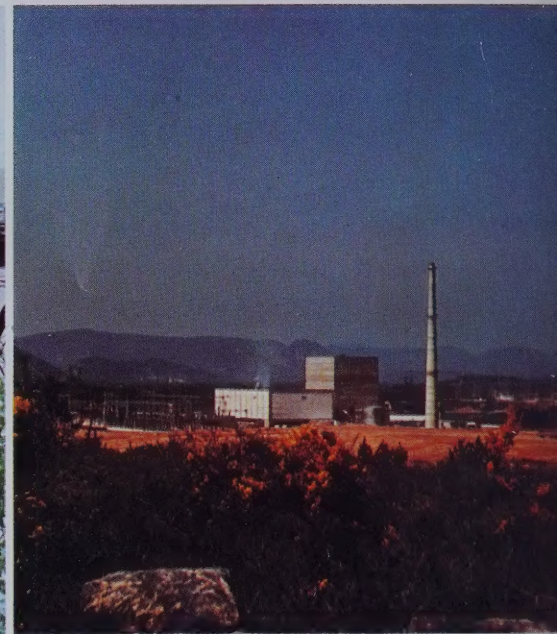
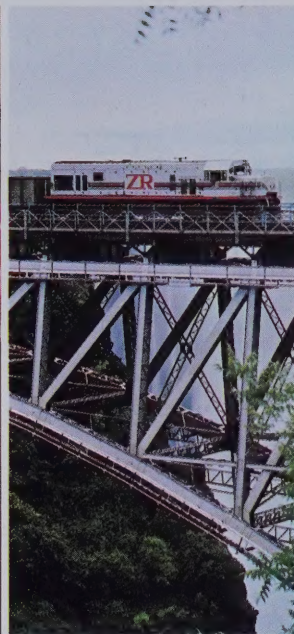
Emphasizing a world view, Smith has at the same time made changes to sharpen the Group's focus on specific national and local markets. One such change is the designation of a Country Manager in each country where General Electric conducts substantial operations. "This change recognizes that there isn't one giant international market—there are, instead, many national markets, each with its own distinctive character, customs, currency and national goals. Our charge to each Country Manager is to understand fully the uniqueness of his specific country and to develop a GE strategy tailored to that uniqueness. Also, he coordinates our diversified marketing efforts and, by thoroughly 'knowing the territory,' guides GE people through the intricacies of doing business in that country."

As one result of these new directions for the Company's international business, Stan Smith sees increased interest by General Electric managers in international assignments. "The growth of this awareness throughout General Electric is vitally important to us, because ultimately the key to success in international markets is top-notch entrepreneurial management. We believe General Electric is attracting, and will increasingly attract, that caliber of leadership."

"Sixty per cent of the total world market for GE-type products is outside the U.S...."



J. Stanford Smith,
Vice President and Group Executive,
International Group



Exports handled by GE's International Sales Division under VP Hoyt Steele range from ship propulsion systems to streetlighting luminaires.

GE exports head for a record

The oldest of several General Electric approaches to international markets is through exports, which are sold largely through the International Sales Division. The *Investor* asked Hoyt P. Steele, Vice President and General Manager of that Division, to discuss GE export capabilities.

Q. Mr. Steele, we've heard that the Company's export business is doing unusually well in 1971.

A. Yes, we're having a fine year. Judging by mid-year results, we appear to be heading for an increase of possibly 50 per cent in our orders received.

Q. How do you account for such an extraordinary increase?

A. First, we've had good export orders during 1971 right across the board. We appear likely to outstrip our 1970 performance in all major product areas.

Second, the export business is an extremely volatile one. We've won a significant number of very large orders this year, and this has helped boost our performance record sharply.

Q. How does your growth in 1971 compare with previous years?

A. Over the past few years, we've been

growing at a rate of about ten per cent a year—which in itself is a healthy figure.

Q. Do you see significant change in the GE export position as the result of President Nixon's new economic program?

A. Currency revaluations by other countries will be helpful. And if we can check the momentum of inflation at home, that will help too. But I don't think the immediate impact will be great as far as General Electric exports are concerned. As I've said, our position is already quite strong. Of course, any move to retaliate against the import surcharge would alter the picture. As yet we've seen no evidence that this will happen.

Q. With the U.S. generally experiencing difficulty in maintaining export levels, how do you explain GE's success?

A. Customers want General Electric technology—and that fact is at the heart of our ability to compete. Any U.S.-based international company has some major handicaps. At home, it's been faced with inflation, which creates important pricing difficulties. Abroad, we meet serious—and we think frequently inequitable—constraints imposed by some of the countries to

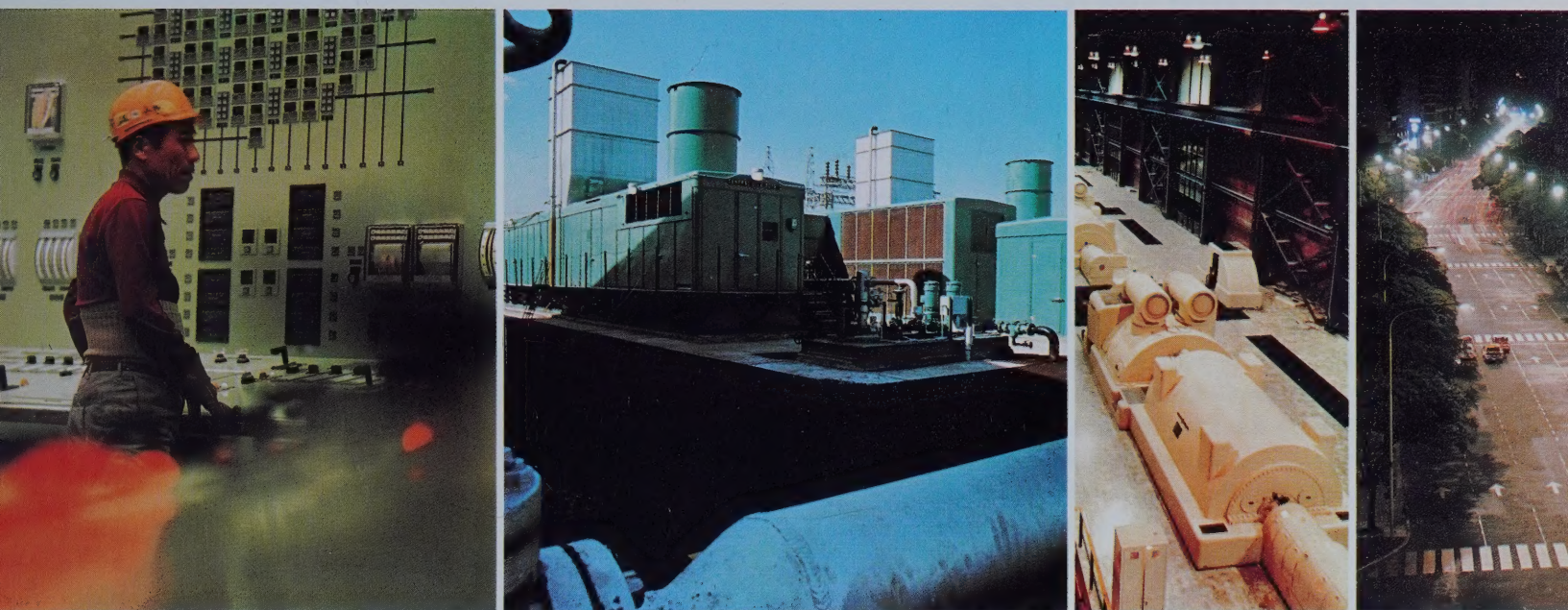
which we export. In other words, GE faces many of the problems involved in the nation's total balance-of-payments situation. But GE has one great offset and that is our technology. Take our marine business. Fuel economy is vital to the builders and owners of new high-speed, high-capacity ships—the supertankers and container ships. GE's steam propulsion systems deliver the low fuel rate that customers can't afford not to buy, and in addition we offer both heavy-duty industrial gas turbines and aircraft-type gas turbines for marine propulsion applications.

Q. What other examples are current?

A. Two important ones are steel automation and electric power generation.

Steel producers around the world are installing ultra-modern, highly automated processing facilities. GE is a leader in steel mill drives and control systems, and orders have been strong.

In the power-plant field—both fossil and nuclear—we have technological leadership as well as the capability to provide the total package and manage the entire project. This total project capability is particularly important in the developing



between: locomotives, nuclear power plants, industrial automation, gas turbines and turbine-generators.

countries, where the buildup of power-generation capacity is a necessary prerequisite to national development.

Q. What product lines do you see developing in the future?

A. Again, products which give us the opportunity to apply our advanced technology. I'll give you three examples.

One is gas turbines, which are continuing to advance into the higher ratings—fifty-thousand kilowatts and more. The whole world faces power shortages such as those experienced in the United States. Gas turbines are a natural for peak-load and emergency uses. I think we will see growth in total sales, although not necessarily the number of units.

A second field is the whole area of automated industrial systems. I already mentioned our steel-mill systems. Beyond this, the demand for automation worldwide seems to be growing in such industries as cement, petroleum refining and process manufacturing. This is an area which has great potential.

Another growth product is the diesel-electric locomotive. The market for locomotives is going to grow particularly

strongly in the developing nations.

Q. Most of the products you've mentioned have been the larger, high-priced products. How do we fare with our exports of smaller products?

A. We sell both elephants and mice. The elephants may seem more spectacular, but the smaller products account for a significant portion of our dollar volume and the vast majority of our orders. We sell transistors in Europe, watt-hour meters in Central America and electric cable in Saudi Arabia, plus literally thousands of other examples. We put great emphasis on development of markets for such products.

Q. Geographically, where are GE's export strengths?

A. The line-up of leading customer-countries changes year by year. Right now, Japan, with its burgeoning industrial expansion, is our leading customer. However, our export activities are about equally divided three ways—in the Far East, Latin America and Europe.

Q. What sort of sales approach do you use to sell such a diversity of products to virtually the whole world?

A. Over the years we've developed a two-

pronged approach. One prong is our network of sales offices in about 30 key locations—in obvious places such as Paris and Buenos Aires and Tokyo and in such other cities as Nairobi and Oslo and Bangkok. We're trying to get sales competence as close to customers' doorsteps as possible.

Our second main sales strength is our reservoir of expertise in New York, available to cover areas where the market doesn't warrant a full-time sales office, and available to work on projects which require technical capability in depth. We have experienced specialists in major technologies who can rush to any customer location in the world in a few hours.

Q. We've discussed exports from General Electric facilities in the United States. Is the International Sales Division also working to build exports from GE affiliates overseas?

A. Yes. The development of overseas affiliates as export sources is just beginning, but we have had some successes. We think that what has been accomplished to date is a prelude to something much bigger as our affiliates build their technology and gain cost leadership.

The view from Geneva

Marshall Bartlett can look from his office onto a colorful panorama of the Rhone River, the towering arc of the Peace Fountain and flower-edged Lac Leman. But his view must extend a great deal further. Bartlett is GE Vice President for Area Division-Europe, directly responsible for overseeing the Company's continental multi-product operations and for administering GE's European licensing and investment activities, as well as for coordinating the manufacturing, export and marketing activities of U.S.-based operations. Add the fact that his Area Division includes the Near East, Middle East and North Africa.

It's a broad swath. Not surprisingly, a recent conversation in Geneva ranged over not only GE's position in Europe but also such questions as the outlook for expansion of the Common Market and of trade with Eastern Europe.

One main point Bartlett emphasized was that, contrary to some reports, General Electric has been improving its results in each main area of activity in Europe—sales, licensing and investments.

"Our problem areas have received disproportionate emphasis," he believes, "because they were in highly visible consumer goods lines. Having shaken out a number of weak operations we're now concentrating our manufacturing operations here on areas of real strength for us: industrial products, electric power equipment, electronics and the like. Our increasing sales reflect these strengths plus substantial gains in U.S. export business. Also, income from licenses and investment dividends have both been rising. It adds up to a sales increase of some 46% since 1966 and an earnings gain that's considerably greater than that."

Two major multi-product operations reporting to Bartlett are Cogenel (Compagnia Generale di Elettricità) in Italy

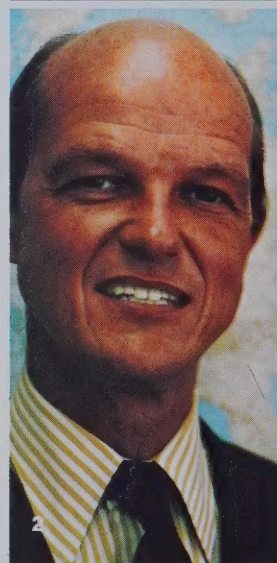
and General Electrica Española in Spain. Of these he comments: "Cogenel has gone through its time of travail and is building selectively now on a profitable base. GE Española is undergoing a similar process, determining its special areas of competence. Development of these affiliates into viable businesses provides us with bases for serving their national markets and for exports to other countries. They're invaluable adjuncts to General Electric's worldwide system."

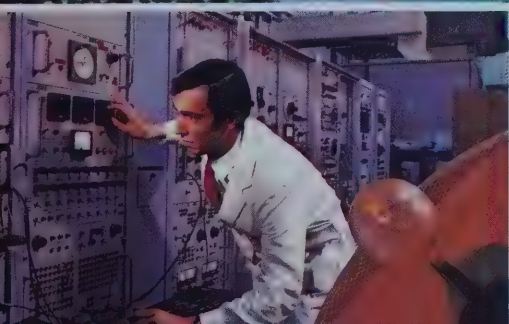
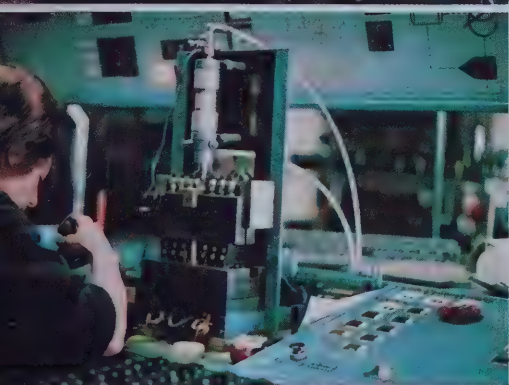
Several other factors seem to Bartlett to be working to General Electric's benefit in Europe:

• **Trends toward technologies in which GE is strong.** "Europe, for instance, is going nuclear in power generation," he notes, "for the same reasons that are making nuclear energy attractive in the U.S.—its greater compatibility with environmental protection, the availability of nuclear fuels as against uncertainties in future supplies of other fuels, and the sheer growth in electrical demand that requires applying multiple energy sources."

Another substantial market is for jet engines for both military and commercial aircraft. "European airlines have made large commitments for GE-powered McDonnell Douglas DC-10 Trijets (see story on page 18) and, in addition, we are sharing in a joint manufacturing program

Geneva's Peace Fountain **1** sets the scene for GE's span of European operations under **2** VP Marshall Bartlett. General Electrica Española, one of the multi-product affiliates reporting to him has its headquarters **3** in Bilbao. Spain's leading electrical manufacturer, GE Española is building special competence in electric motors **4** and is helping to enlarge Spain's export sales, as shown **5** by distribution transformers bound for Colombia.





on the A-300B airbus. We are also getting orders for GE stationary gas turbines from all over the Area Division."

• **The success of manufacturing-associate arrangements.** "These arrangements result in those portions of a product subject to rapid technological change being manufactured in the United States, while other major parts and final assembly and test are handled by the manufacturing associate overseas. I've mentioned gas turbines—they've benefited greatly from this type of arrangement. So has General Electric ship propulsion equipment. The turbine rotors are produced in Lynn, Mass., while the rest of the units are produced by any one of six European associates. These arrangements gain us business we wouldn't otherwise have a chance at because they result in a major piece of the action for European builders."

• **The evolution of GE sourcing in Europe.** "Our European manufacturing facilities are providing customers with such relatively sophisticated products as locomotive propulsion systems and power transformers. Our Cogenel affiliate in Milan has developed into Europe's leading supplier of numerical controls for advanced machine tools. These are strong beginnings for building a system that gives the Company

The lighted symbols 6 of Cogenel (Compagnia Generale di Elettrocita S.p.A.) overlook the Piazza del Duomo in Milan, its headquarters city. The affiliate has developed the electronics competence to become Europe's number one supplier of numerical controls for machine tools 7. Its range of industrial products also includes molded-case circuit breakers, shown 8 undergoing quality tests. Cogenel is also Italy's chief supplier of airborne radar 9 and of complex electronic components for Europe's space program.

a number of options in going after international orders—options as to factory loading, delivery cycles, costs, finance arrangements and the like. Again the real meaning is that we gain substantial business we'd otherwise be likely to lose, and serve our customers better."

• **Prospective broadening of the Common Market.** Bartlett sees Europe's transition from a nationalist to a supranationalist outlook gaining momentum as "Europeans realize that high-volume production, the economies of scale, are essential to keeping European producers competitive in world markets. The prospective entrance of England into the Common Market will lead, in all likelihood, to other countries coming in. We expect the European market to double today's size by 1980 and thus become as large as the present U.S. market. Our European operations give us the bases for serving that larger market."

• **Long-term prospects for trade with Eastern Europe.** Again, this will come as the result of changed perspectives, Bartlett believes. "U.S. people are coming to see many advantages in peaceful trade with Eastern Europe, with U.S. Government concurrence and guidance. Western Europe and Japan are already deeply involved in trade with Eastern Europe and if the United States does not participate we just cut ourselves off from jobs, share owner earnings, technological stimulus and the chance to improve the U.S. balance of payments. General Electric will, of course, proceed only as we have governmental approval for supplying non-strategic products and technology."

The view from Geneva is thus more sanguine in mid-'71 than it has been in years. "If we manage ourselves properly," Bartlett says, "I see no reason why the GE news from Europe shouldn't continue to be positive and profitable."



The bustling city of Caracas supplies a symbol of the economic growth that VP Russell Whitmyer sees in Latin America.

New Latin American rhythms

The impression that some people hold of Latin America as a land where progress is always put off to sometime in the future is increasingly at odds with the real situation, in the opinion of Russell E. Whitmyer, Vice President and General Manager of the Company's Area Division-Latin America.

His viewpoints reflect a depth of experience both in time and space. He's been General Electric's chief of Latin American operations for over eight years and is responsible for GE affiliates in six countries—Argentina, Brazil, Colombia, Mexico, Uruguay and Venezuela—as well as coordinating GE activities throughout Central and South America.

Today he sees the Company's affiliates south of the border operating in what he describes as "an improved climate for business growth." He ticks off four elements which he considers particularly significant to improving economic prospects.

Relatively stable currencies: "Not too many years ago, as the value of the Brazilian cruzeiro declined, the Brazilian government would devalue it perhaps as much as 20% at a time. Businessmen never knew

when the sword of Damocles would fall. A few years ago, the Brazilians adopted a policy of so-called mini-devaluation, which means that devaluation takes place much more often, but by only one or two per cent on each occasion. This means that the businessman can plan and forecast with a great deal more confidence. Likewise, the currency has been relatively stable in other countries—with the recent notable exception of Argentina. In Mexico, for instance, the peso has been firm since 1954. The last devaluation in Venezuela was ten years ago. These developments have been really helpful."

Growth of the middle class: "While there are very rich and very poor extremes in Latin American countries, there's also an encouraging middle-class expansion. Most Latin American countries now have a large core of people with the affluence to support something more than a subsistence economy. The growing middle class has obviously expanded our markets for consumer products. In turn, the growth in consumer demand has stimulated demand for the Company's industrial and electric utility lines."

Increasing levels of education: "Most North Americans don't realize the emphasis that Latin American countries are putting on the improvement of educational facilities—particularly at the primary school levels. These countries have made real strides in improving literacy levels. Take a small nation like Uruguay. It has a literacy level of over 95%. Across the whole of Latin America there is still a long way to go, but they are not standing still. One result of these higher educational standards is that manufacturing integration becomes more feasible. Now that we have the people who can carry out more complex assignments, we are not limited to simple assembly operations."

Improved communications: "In just the last decade, the whole world has made tremendous improvements in communications. We now have satellite communications; jet planes link all points of North and South America; we have instant teletype systems between major locations. All this has had a particularly favorable impact in Latin America. For General Electric affiliates it makes possible a much better integration."



product range of GE affiliates includes watt-hour meters in Brazil, motors in Colombia, TV in Venezuela and lamps in Argentina and Mexico.

While he cites these common denominators that apply to much of Latin America, Whitmyer is more aware of differences between countries than similarities. "It's a kaleidoscope," he says. "Each country where we do business is sharply individual, and each of our affiliates has a different personality because of the distinctive national characteristics of people, the individual chemistry of management, the markets they're in, the relative difficulties they have with competition and their efforts to cope with their economic environment."

"From strengthening its fight against inflation to providing better educational opportunities, Latin America is an area of change and improvement."

Among the challenges to continued business growth he emphasizes the increasing need for professional managers in larger numbers.

"We need outstanding people, particularly at the managerial and professional level," Whitmyer explains. "The Company's affiliates in Latin America are

working to create a climate of opportunity for nationals. We think we've been attracting excellent people, along with attracting a good mix of U.S. trained people who are involved in transferring General Electric technology and business methods to these countries."

The various companies are devoting a great deal of effort to training and developing people at all levels of the organization in each affiliate. "In the Mexican affiliate last year, for instance, thousands of man hours were devoted to classroom training—drafting, basic engineering, management courses, accounting, language, stenography—all the skills that a modern business needs. These efforts to improve the competence of General Electric employees help the Company, of course, but they also help each country develop its human resources."

Another common challenge is costs. Last year Area Division-Latin America initiated seminars involving manufacturing, purchasing, finance and design specialists from each of the affiliates. In the first seminar, covering refrigerators, the group compared each others' designs and

practices for five days, and came up with goals leading to significant cost savings. The same thing has been done with television receivers.

He sees the development of cost leadership, country by country, as a necessary prelude to building the export potential of the Latin American affiliates. The Brazilian affiliate's large plant at Campinas has already exported transformers to Mexico. In addition, the affiliate has developed an export business in sealed-beam headlamps. GE Mexico is developing an aggressive program for marketing clothes washers in Central America.

And when he talks about growth, Whitmyer emphasizes, he refers to *profitable* growth.

"General Electric has shown over a great many years in Latin America that significant contributions to the progress of a host nation can go hand-in-hand with making a profit for General Electric share owners. The result is that we've consistently improved our profit performance in recent years while solidly advancing the welfare of the countries in which we do business."

Japanese example spurs Far East change

J. Russell Mudge is Vice President and General Manager of GE's Area Division-Far East. The following sums up main points from a recent review with the *GE Investor*.

The example of Japan—its startling rise to challenge the leaders in world trade—has fired the imaginations of nations throughout this fastest-growing part of the world. They see how it isn't really a lot of individual Japanese business concerns going separately after world markets but instead it's a tremendous integration of business and government. It's really Japan Incorporated. I have no doubt, for instance, that the Japanese example is a powerful element at work in the People's Republic of China, causing a move toward ending their long period of almost total isolation, as evidenced by the recent invitation to President Nixon. While it's premature to base any hard planning on recent Chinese actions, we can see some interesting long-term potentialities in the opening up of this market of 800 million people to the supply of technology and the sale of a wide range of capital and industrial goods.

Another promising area of change is Indonesia, favored by the new stability of its government. Here is potentially one of the wealthiest countries, blessed with resources of every kind. General Electric people have learned how to participate profitably in developing countries starting with relatively low cost investment bases and growing them, as we have for example, in the Philippines. A similar approach may be useful in helping the Indonesians develop their economy.

General Electric affiliates in Australia and Africa are serving their national markets with a wide variety of products. Particularly encouraging to us this year is the recent improvement of our Australian

consumer goods operations, both major appliances and housewares.

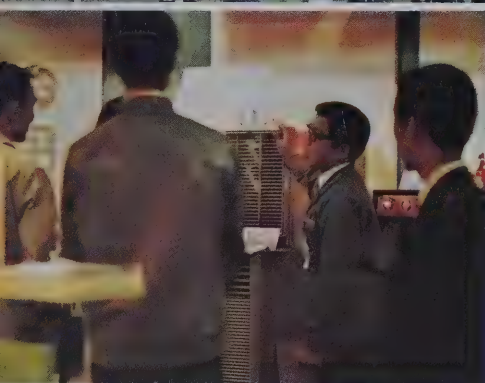
In India we're helping to strengthen the economy by broadening the range of products supplied by our affiliate, Elpro International Ltd. at Poona. Present output includes x-ray equipment, alloy and ferrite magnets, Calrod, surgical equipment and lightning arresters. We're expanding to produce fused magnesium oxide, largely for export, utilizing magnesite mined in India. Yes, it adds up to a strange mix, but these are things that India's economy needs that we can supply.

We have facilities in place in Hong Kong to help keep GE competitive in the radio business and are rapidly expanding our Singapore operations to meet the requirements for lower-cost component manufacture.

It's important, in considering our Hong Kong and Singapore production facilities, to keep a worldwide view. The facilities are there as elements in GE's world system for competing in international markets. Shipments to the U.S. represent only a transitional phase. For example, as much as 50% of some component lines manufactured in our Singapore facilities

"A panorama of Singapore 1 shows one of the Far East's most spectacular growth areas," reports 2 VP Russell Mudge. "A business-oriented government has created a favorable economic environment by inviting investment, establishing eight vocational and technical training centers, setting up new industrial parks or estates, and by developing the city's port, rail and electrical resources. GE is participating in the growth through investments in facilities that include 3 appliance controls, 4 electronic components and 5 TV parts, as well as housewares, small motors and molded-case circuit breakers."





are already destined for markets other than the U.S. This perspective is in contrast with current criticism that pictures U.S. industry as "exporting jobs" by setting up offshore plants for the sole purpose of shipping low-cost products and components back into the U.S.

"GE's approach is to move components manufacture offshore rather than give up a business—and the jobs it supplies."

Our view on this issue was expressed by Fred Borch in one part of his Senate subcommittee testimony. He termed the charges of exporting jobs as "quite incomprehensible," and went on to say that GE's approach is

"... to serve the American market as far as possible with American goods made with U.S. labor in U.S. factories. We establish factories overseas also to serve those local markets with our products, when it is not possible or economic to do it with exports. These factories return dividends to the U.S. and are customers for U.S. exports of components, and many workers in the U.S. are employed

manufacturing those export components. Regrettably, we have also been increasingly finding ourselves in a position of being unable to compete for the U.S. market with U.S. manufacture—and are faced with the alternatives of giving up the business entirely, or moving offshore. We prefer moving offshore to giving up a business, in order to maintain the jobs of the General Electric people engaged in designing, engineering and distributing the products in this market."

We can see that the approach outlined by Fred Borch is working. Because the Company has invested in Far Eastern facilities, General Electric people in Portsmouth and Ashland, Bridgeport and Fort Wayne are able today to keep on developing and marketing their products in the United States. We've helped GE to continue marketing radios; today we're partners in the struggle to keep U.S. TV operations competitive. It's the same with components for appliances, housewares and other product lines.

Another important consideration is the beneficial effect of the Company's offshore operations in winning U.S. export business. The Far East contributed a substantial percentage of General Electric's total U.S. export orders in 1970. Again, we can see a very definite correlation between work on export orders for General Electric people in places like San Jose, Schenectady and Erie and the fact that the Company has invested in establishing viable local business operations in India, Africa, the Philippines, Japan, Australia and elsewhere offshore.

Overall, we're very bullish about the prospects for Area Division-Far East. Records were set last year in both U.S. export orders and sales by our offshore affiliates. We fully expect to better those records in 1971.

"GE is part of the scene in Tokyo 6 with several successful Japanese joint ventures including one in air conditioners 7.

Philippines consumer goods operations include TV production 8. In India, our affiliate produces x-ray 9 as well as other products. In Australia we have a strengthening consumer goods business whose operations include high-quality service 10 even into the Outback. The Area Division's activities also include aiding GE operations in Hong Kong and such African projects as U.S.-export locomotives to Zambian Railways, as shown in the cover photo for this *Investor*."



Earning income via creative licensing is one of the responsibilities of VP William L. Lurie. Examples of successful programs pictured: GE copper dip form process for making copper rod and wire; GE nuclear power systems and fuel; and GE-developed self-cleaning ovens.

Licensing: further payoff from technology

One theme that emerges from a survey of General Electric's international business is the importance of GE's technological leadership. The Company's innovative research and development, together with the practical experience and know-how of General Electric businesses, provide much of the competitive thrust behind General Electric export sales, offshore business operations and the growth of joint ventures and other business relationships around the world.

Licensing can help or relate to all these approaches and is a valuable part of GE's flexible structure for international business. The International Business Support Division, under Vice President and General Manager William L. Lurie, coordinates international business strategy with all GE product businesses and, as one of its responsibilities, manages the Company's licensing program. In countries where direct export of U.S. products is not possible because of protective buying habits, high transportation costs, excessive import duties, or for other reasons, Lurie sees licensing as "an important and sometimes the only way to participate in the

growth of some of these major markets."

In addition to providing direct license income, licensing frequently leads to the sale of related U.S. manufactured parts or equipment as the licensee learns that GE is a low cost, reliable, quality supplier of various components. Lurie added, "As the licensee puts our technology to work, GE also becomes more closely involved with the problems and requirements of the local market and frequently identifies opportunities for added business participation in the form of joint ventures, cooperative manufacturing and joint development as well as direct sales."

GE licensing activities have expanded, in the last decade into many new product lines and countries. Says Lurie: "GE currently has some 337 major license agreements in force with 227 companies in 33 countries, and our income from international licensing has been steadily increasing."

U.S. technology is the world leader in most key areas, although several industrialized countries are making great progress in some fields. Lurie sees GE in a strong position in many areas and is con-

fident about the future. "GE is the most creative business organization in the world, with a current and growing international portfolio of nearly 30,000 patents and applications. And with our experience in transferring proven technology and our practical approach, GE licensees have been consistently successful."

By working with General Electric, Lurie says, "licensees are able to manufacture products that are more useful and get into operation sooner with fewer problems than would be possible on their own and with greater productivity. During the coming years we expect to see shifts in the products licensed in various countries and the way this business is conducted, but we continue to see licensing as a valuable source of business growth for General Electric, and an effective way to help others receive practical benefits from technology."

For the International Group, and the Company as a whole, the International Business Support Division also provides a central source of expertise in international planning, finance, law, personnel, technical resources and communications.

Investors are asking: Interest in product reliability runs high among share owners

With consumer products becoming more and more complex, doesn't this mean there's more of a chance for something to break down and more need for costly service calls?

There's no question that more and better features contribute to the complexity of a product. But at the same time, through sophisticated technological developments the Company has devised many programs that enable us to make these more complex products while increasing reliability.

For example, in the Refrigerator Products Division we have the GE designed and built product quality analyzer. This computerized system makes 35 tests in just 10 seconds, providing a 100% production line check of electrical performance and safety characteristics. Its use contributes to a significant reduction in service calls.

A companion system for in-home use on current side-by-side refrigerator-freezers (and soon on other no-frost combinations) is called "RED" for rapid electrical diagnosis. Without even opening the door, the serviceman can tap this RED into the wiring harness circuit and check all the operating and electrical components. Results to date indicate that RED reduces repair time by 20%, eliminates unnecessary use of parts and cuts call-backs by more than 50%.

Another example of the Company's concern for product reliability is the green dot quality assurance program being carried out at the Home Laundry Products Division. Electronic equipment applies a battery of tests to each component or assembly and all that pass are automatically sprayed with a green dot. This takes operator error out of inspection and

provides positive identification of good parts before they are assembled into the product. This is not a spot-check—100% of the vital components are subject to this test.

Attention to top quality has long been a strength of the Company, and for good reason. Fixing an appliance in the home is much more expensive than making it right in the first place. Emphasis on product quality is simply good business.

How is the Company doing with its new business of building transit and commuter cars?

Since becoming prime contractor for rapid transit and commuter cars last year, the Company has written three major orders totaling \$143 million. These include 152 high-speed, air-conditioned commuter cars for the Long Island Railroad, 144 for Penn Central's New Haven line and 128 for Harlem and Hudson line service.

All propulsion and control equipment for these 424 cars is being manufactured by the Transportation Systems Division in the Erie, Pa. plant.

The New Haven cars will be assembled in the Company's new \$14 million, 350,000-sq.-ft. rapid transit and commuter car facility at Erie. The first New Haven cars are scheduled for delivery next summer. Assembly of the other cars has been subcontracted to the Budd Company, which has begun delivery of the Harlem and Hudson cars.

The General Electric cars for the Long Island will augment the existing fleet of 620 GE-powered and controlled cars recently delivered.



Where will the 1971 Information Meeting be held? In the Grand Ballroom of the Astroworld Hotel, Interstate Highway 610 at Kirby Drive, in Houston, Texas. Time and date: 9:30 a.m., October 26. Program: introduction of GE Directors; top managers' reports on the Company's business; answers to written questions and comments from share owners.

Investor Highlights: Major organization changes announced

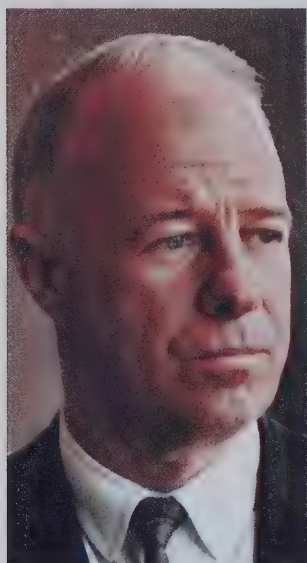
Two new directors elected

NEW YORK, N.Y., August 9, 1971—Walter D. Dance and Reginald H. Jones have been elected members of the Board of Directors of General Electric Company. Dance and Jones are senior vice presidents and members of the Corporate Executive Staff, which provides counsel and staff service to the Corporate Executive Office with regard to effective use of Company resources, appraisal of the business environment, and review of long-range plans with operating groups.

The membership of the General Electric Board now numbers 20, of which six are from within the Company.

Jones joined the GE Business Training Course in 1939 and served eight years as a traveling auditor before being appointed assistant to the comptroller of the Apparatus Department. After a series of assignments in the apparatus area he was named general manager of the Air Conditioning Division in 1956.

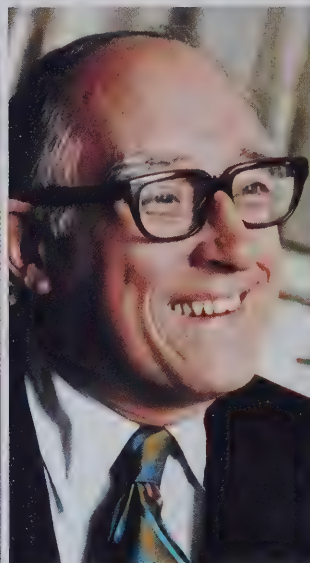
Two years later Jones became general manager of the General Electric Supply Company Division, and in 1961 he was elected a vice president of the Company. Thereafter he served as general manager of the Construction Industries Division and as group executive of the Components and Construction Materials



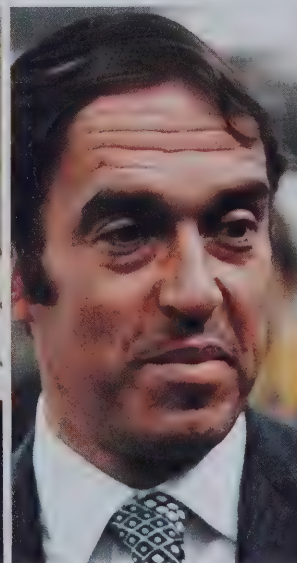
Walter D. Dance



Reginald H. Jones



Charles E. Reed



Reuben Gutoff



Arthur E. Peltosalo

Dance joined General Electric in 1948 as an appliance sales counselor and served in a number of sales management positions until 1959, when he was named general manager of the Dishwasher and Disposall Department at Appliance Park. Later he was appointed general manager of the Household Refrigerator Department.

In 1962 Dance became general manager of the Hotpoint Division, and in 1964 he was elected a vice president of the Company. He later served as general manager of the Major Appliance and Hotpoint Division before becoming group executive of the Appliance and Television Group in 1968. He was elected a senior vice president in 1970.

A Dartmouth graduate, Dance spent four years in the retail appliance business and four years in the Armored Corps before joining General Electric.

Group and later the Construction Industries Group. In 1968 he was named vice president-finance for the Company and in 1970 he was elected a senior vice president.

Born in England, Jones came to this country as a boy. He is a graduate of the Wharton School of Finance and Commerce of the University of Pennsylvania, which institution Jones serves as a trustee.

Reed named senior vice president

NEW YORK, N.Y., August 11, 1971—**Charles E. Reed** has been elected a senior vice president of General Electric Company. Dr. Reed becomes a member of the Corporate Executive Staff with responsibility for Technical Resources. In his previous assignment he was vice president and group executive of the Components and Materials Group.

Gutoff and Peltosalo become group executives

NEW YORK, N.Y., August 11, 1971—**Reuben Gutoff**, formerly vice president and general manager of the Chemical and Medical Division, has been appointed vice president and group executive of the Components and Materials Group.

Arthur E. Peltosalo, formerly vice president and general manager of the Information Services Division, has been appointed vice president and group executive of the Power Delivery Group.

GE's unbreakable windows now mar-resistant

Lexan® plastic from General Electric, transparent as glass and tough as metal, is a virtually unbreakable window material. Now an important property has been added: new Lexan® MR-4000 glazing materials are mar-resistant as well.

The new GE material has withstood laboratory tests simulating 20 years of railroad car wash rack conditions without visible change in appearance. In the tests, pieces of the new material were mounted on an oscillating support table and subjected to standard types of bristle brushes. Ordinary clear plastics subjected to the same test develop serious surface marring.

Lexan mar-resistant sheet is well-equipped for the growing number of high-traffic applications where transparent windows are desirable, ranging from the transportation industry to retail stores, commercial and industrial buildings, public housing projects and computer rooms.

Air Force reorders in California— 250 more GE modular homes

Just as General Electric's Re-entry and Environmental Systems Division is completing work on its first military housing project, the Air Force has awarded the Division a second contract for space-age modular homes.

A joint venture of RESD and the A. J. Construction Co., the \$5½ million award calls for a community of 250 homes at Norton Air Force Base, San Bernardino, Calif. (The first project was for 200 homes at George Air Force Base, Victorville, Calif., where airmen and their families have already begun to move in. See *GE Investor*, Fall, 1970.)

Each house consists of several closed modules to be completely finished in a prototype GE factory at Apple Valley, some 60 miles away, and shipped by highway to the site. The Norton community will be made up of both single and duplex one-story homes of contemporary architecture with varied exteriors.

At its peak, Apple Valley will produce three complete homes a day. Production is scheduled to be completed by April, 1972.

Meanwhile, for another project, RESD has begun shipping housing modules from its housing laboratory in King of Prussia, Pa., to Memphis, Tenn., one of the sites for the Department of Housing and Urban Development's "Operation Breakthrough" demonstration project. GE is one of 22 firms selected to build prototype housing to ease the housing shortage for low and middle income families.

These are current examples of bringing space technology down to earth: focusing the abilities of RESD materials experts to improve housing methods. Results have included plaster walls that don't crack when trucked to the site, paper honeycombs sandwiched in plywood to make strong floors, and silicone-stone roofs designed to last over 35 years. Heating, air conditioning, plumbing and appliances in the new homes are clustered in a single, easy-to-connect central utility module.

Pacemaker used in reverse slows a galloping heart

The cardiac pacemaker originally designed to stimulate a slow heart into normal pulsing has found a new use—in reverse.

Doctors at Grace Hospital in Detroit, working with GE Medical Systems, have implanted a pacemaker to control the galloping heart of 24-year-old Harolene Greene.

For 14 years Miss Greene had lived with a heart that sporadically raced at up to 170 beats per minute, twice the normal rate. Medication, the usual treatment, worked for a while. But it ultimately failed and Miss Greene was hospitalized.

Cardiologist Stanley Wolfe presented the challenge to Medical Systems, and General Electric produced a modified pacemaker that senses an impending "gallop" and times the heart back to a normal beat. Miss Greene now leads an active, normal life...and many others suffering with a similar condition are expected to benefit from the combined pioneering of patient, doctor and GE medical engineers.

As easy as 12345

GE share owners writing to the Company about their stock (change of address, non-receipt of dividends, lost certificates, etc.) now have an easy ZIP code to remember: 12345! It's one of several individual zip codes assigned to "major mail receivers" by the U. S. Postal Service to speed delivery. Some 50,000 pieces of GE mail arriving daily at the Schenectady Post Office can now come directly to the Company without local sorting.

The new address, if you have a question about your account: Share Owner Records, 1 River Road, Schenectady, N.Y. 12345.

DC-10



a different kind of airplane

When the McDonnell Douglas DC-10 Trijet entered passenger service in August, powered by General Electric CF6 engines, was it just another variant on the new wide-bodied airliners or was it something different?

Ask the man who flies one! Cliff Stout, Douglas's Director of Flight Operations and Project Pilot for the DC-10, quickly establishes some important distinctions.



Its engines are quieter than those of any other jets in service.

So quiet, in fact, that during tests from Douglas's Flight Test Center in Yuma, Arizona, people in the neighborhood who wanted to see the DC-10 in flight actually telephoned Douglas to ask when take-offs were scheduled. "They told us," reports Test Pilot Stout, "that the airplane was so quiet that it was up and away before they even heard it." To achieve this "quiet," Stout went on to explain to the *Investor*, "required thousands of hours of research, development and engineering. There are about 3,000 pounds of sound attenuating materials and structure on each DC-10."

It's the "good neighbor aircraft." That's how the DC-10 was described at the Paris Air Show, and Cliff Stout says the reaction has been similar everywhere the plane has gone. For one thing, the big General Electric engines are virtually free of smoke. This dramatic improvement in engine performance coupled with the quietness of the engines, which were designed specifically to low-noise criteria, make the DC-10 the most environmentally acceptable airliner in service.

It's a new step in air safety and reliability. "With the DC-10," emphasizes Stout, "we have the first passenger jet designed from the start for all weather landing capability. This necessitates that the airplane be able to sustain just about any kind of systems failure without impairing its performance, which, in turn, means another set of back-up systems in the aircraft. While this adds up to a safer airplane, it also gives us a much more complex machine to test."

And test it they have. The big plane was flight tested over 1,500 hours prior to approval by the Federal Aviation Administration for airline service. And the tests go on. Full-scale tests on the ground include fatigue tests which, when completed next March, will have simulated 120,000 flight hours—more than would be accumulated in commercial service in 40 years. In this way it is possible to anticipate problems years in advance, and make any necessary corrections before the problems actually occur.

Its GE engines are something new in flight. "From the very first flight of the DC-10," reports Stout, "I have been impressed with the performance of the GE engines. My confidence in the power plants has grown with the unprecedented reliability they have shown throughout the flight development program. All pilots who have flown the airplane are equally impressed with

the responsiveness of the engines. In summary," the test pilot says, "no new engine I have flown equals the reliability and performance characteristics of the CF6."

These giant fan-jet engines, rated at 40,000 pounds thrust each, are twice as powerful as most engines on airliners now in use. Two of the engines are mounted conventionally: one on each wing. But, unlike other trijets, the DC-10 has its third engine mounted at the center rear in the vertical stabilizer to provide for a straight-through flow of air to the engine. This reduces the stress on the fan blades, eliminates problems of fatigue, improves fuel consumption and reduces maintenance costs. The arrangement also means fewer chores for the pilot during take-off and landing—just one of the many features that make the DC-10 safe and reliable.

The DC-10 offers important use and cost advantages. Its General Electric engines offer 25 per cent better fuel economy than most commercial jets operating today and are designed for easier access and quicker service in order to reduce costly out-of-service time for the airplane.

The DC-10 was built to be able to serve the intermediate airfields as well as the larger international airports. This ability to land and take off at smaller airfields, including New York's convenient LaGuardia Airport, means that the DC-10 can serve many more cities than the larger 747 now in service. Thus, the DC-10 promises to be one of the most flexible, practical and economical airliners ever to enter commercial service.

Many airline observers believe that the DC-10 is the just-right size for the 1970s. They think that with its ability to serve a great number of cities, and its high revenue potential (it will carry some 245 to 345 passengers depending on interior design), the DC-10 offers opportunities both to achieve significant operational efficiencies and economies and to generate much-needed profits for the airlines. Its wide range, from 300 to 4300 statute miles, means that it can be used both for short hops and transcontinental flights.

The DC-10 is off and flying. It's the right size. It's environmentally acceptable. It's economical to operate. With all this going for it, it may well help to spark a turnaround toward more profitable operations for the airlines. And for General Electric it continues to hold the promise of a growing and profitable role in commercial aviation for years to come.

General Electric Major Appliances... always a step out front



A. Space a problem? General Electric has the answer with the new compact **Portable Clothes Dryer**. It measures only 28½" high, 21" wide by 18¾" deep and weighs only 60 lbs. It dries up to 5 pounds of clothes and features permanent press and fluff cycles. Perfect for small homes, apartments, mobile homes, even college dormitories. Roll it under a counter, in a corner, in a closet, or, mount it on the wall with the special kit available.

B. General Electric puts the squeeze on trash with the new **Trash Compactor**. It eliminates daily trips to outdoor trash containers by reducing a week's accumulation for a family of four to one neat bag. Just pull out

the drawer, drop in the trash, close the drawer, push a button and in less than a minute the trash is reduced to one-fourth its original volume. Each time the drawer is opened a deodorant spray is automatically released to help control odors.

C. Who else but General Electric gives you ice cubes, crushed ice or cold water in a built-in Custom Dispenser right on the freezer door? This incomparable **Americana® Refrigerator** leads the way in features and innovative design.

D. Imagine a 5 pound roast ready for serving in just 45 minutes! Or, a baked potato in

just 8 short minutes. That's how fast you can cook with the new General Electric **Microwave Oven**. This unique oven can be used on a counter, built-in, or on a special portable cart. Ideal for your home, out on the patio . . . even on a boat or at the summer home.

E. Need a new decorative piece of furniture for your room? This one will not only look good, but will cool the room as well. It's the General Electric **Custom Superthrust® Room Air Conditioner**. The deluxe control panel is hidden behind a beautiful simulated rosewood panel. And, the Comfomatic® control gives you the correct fan speed and best comfort control . . . automatically.

New ways to look at time

Fall 1971 21

These are samples of our latest introductions. Decorator clocks utilizing wood, copper, brass, plastic. Some have pendulums that swing or crystals that open. Contemporary, French, Spanish, Early American designs, we've got them all. Alarm clocks too, with features to fit every need. Lighted dials for easy reading in the dark.

Repeat alarms that let you snooze, then wake you again.

Dots of light that tell you the alarm is set. Even alarms with handy jewelry tray in the case.

Ideal for giving as well as for getting.

You can find these and other models where GE clocks are sold.





Keeping America Beautiful...

3-way Hairsetters for mist, condition or dry sets. Salon-Style Hair Dryers for thorough, speedy drying. Lighted Make-up Mirrors with 4 light settings and both magnified and regular mirrors. Portable Hair Dryers with styling comb & brush attachment.

A Gift For Every Beauty Need. From General Electric.
The Beauty-Makers



Food Products

GE Deluxe TOAST-R-OVEN® toaster.

Automatic toaster, top browner and oven—three appliances in one.

GE New Deluxe Buffet Skillets (Model SK-27) in decorator colors featuring new Snap-Away leg and handle sections for easy cleaning.



"Press As You Sew" Iron

Versatile new "Press as you Sew" iron is ideal for the home sewer. Narrow tapered soleplate especially designed for doing narrow pleats, seams, darts and tubular areas such as long sleeves and pant legs. Color styled in beautiful Lavender Mist, the iron may be used for spray, steam or dry ironing. Low silhouette body with open handle design. Removable plastic water bulb angled to direct the spray onto the fabric. Polished aluminum soleplate.



Hotpoint

A quality product of General Electric Company

A Respected Line Of Major Appliances With A Full Array Of "Convenience" Features

Take cooking appliances, for example. The new 27-inch **built-in double wall oven** (Model RK776) features fast, thorough, pyrolytic self-cleaning in both ovens. It also offers automatic timed cooking, rotisserie, decorative patterned smoketint oven windows and interior lights. The handsome, brushed-chrome finished **Deluxe Surface Unit** (Model RW85) has a Calrod® barbecue grill and interchangeable Teflon-coated griddle, four Calrod Surface Units (including two 8-inch extra high speed units), and infinite heat controls. The chrome-trimmed matching **Vented Hood** (Model RV460) has 2-speed squirrel-cage blowers for thorough ventilation, recessed lamp, push-button controls, and two easily removed grease filters.

The new **Whisper-Clean Dishwasher** (Model DA760), with its special sound insulation, reduces dishwashing noise to a whisper. Other outstanding features are Lift-A-Level rack, three-level wash action, four pushbutton cycles, and 17 place setting capacity.

The **Compactor** (Model CH500), the newest and proudest addition to the

Hotpoint appliance line, provides the latest answer to the removal of household trash. It reduces a week's glass, metal and similar trash to a compact, sanitary disposable container. It can be used either free standing with an optional wood cutting board top, or neatly built-in as shown.

Our "Food Center" **Refrigerator-Freezer** (Model CSF24KM) offers the special convenience of the unique Exterior Ice Service . . . take out a few cubes or remove the bin for countertop use without ever opening the freezer door. 23.5 cubic foot capacity. No-frost throughout and rolls on wheels for easy cleaning.

Two of the most popular laundry appliances are the "Lady Executive" **Automatic Washer** (Model WLW4950) and the matching "Jumbo" **Clothes Dryer** (Model DLB2800). The "Lady Executive" Washer has a soak system that soaks from 5 minutes up to 10 hours. Then it goes into the wash cycle of your choice with fresh clean water and detergent—all automatically. It combines complete flexibility with automatic operation to handle today's wide variety of fabrics and colors. The dryer, with its 7.5 cubic foot drum, provides faster, cooler drying and is especially considerate of permanent press garments.

Quiet, clean and powerful...GE thrust for a different kind of airplane. See page 18.



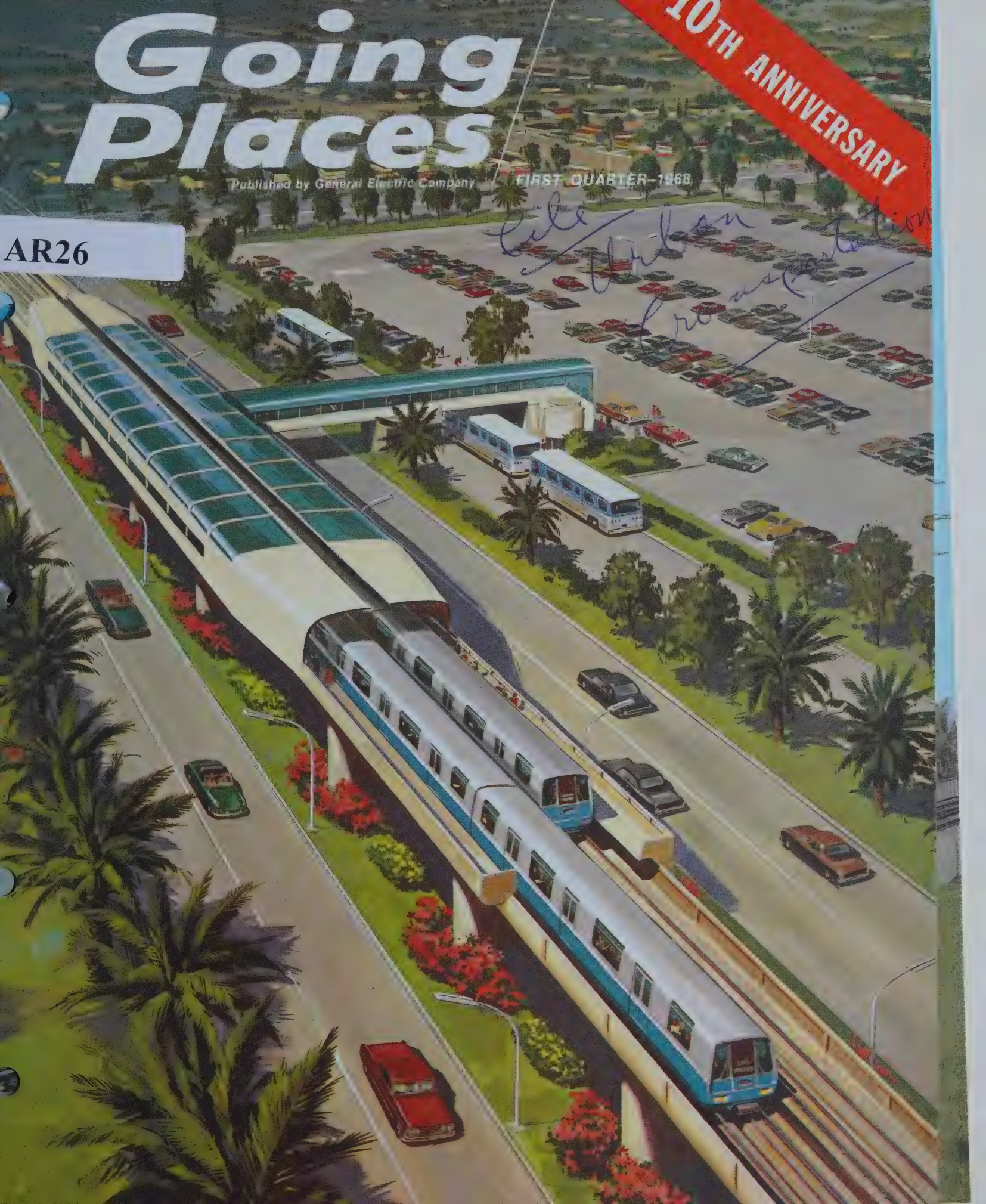
Going Places

Published by General Electric Company

FIRST QUARTER-1968

10TH ANNIVERSARY

AR26





Dedicated to the
Promotion of Balanced
Metropolitan Transportation.

BALANCED TRANSPORTATION

When GOING PLACES was initiated ten years ago, three basic principles were set forth to help promote Balanced Transportation:

- Transportation planning is an integral part of overall area-wide planning.
- Public transportation requires public support.
- Legislation designed to provide sound transportation is a good investment.

Now, a decade later, the general public along with local, state and federal officials, is gaining an increased recognition of the benefits of Balanced Transportation. Significant progress is being made in New York, Chicago, Boston, Philadelphia and Cleveland. New systems are becoming a reality in San Francisco, South Jersey, Washington, D. C. and the Northeast Corridor. Balanced Transportation plans in Los Angeles, Atlanta, Seattle, Pittsburgh and Baltimore are well underway.

By embracing the Balanced Transportation concept, people in these and other metropolitan areas will enjoy more job opportunities, an improved tax base and increased mobility in an "AGE OF CITIES".

R. D. Weeks, Manager
Metropolitan Transportation Projects
General Electric Company

COVER: Artist concept of Southern California Rapid Transit District Chandler Boulevard Skyway Station (see page 6).

Going Places FIRST
QUARTER
1968

Editor R. L. Bowersox
Associate Editor.. W. B. Whisnant

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Fred J. Borch, Pres.; R. M. Estes,
Sec'y; J. D. Lockton, Treas.
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All over the country, communities are in danger of strangling in their own traffic. New York — one of the worst — is moving on a broad front to break the jam before it is too late . . .

NEW YORK

A new approach to the transportation crisis is getting under way in New York State. It is attracting the attention of planners all across the country.

Involved is a massive step-up in spending — almost 7 billion dollars in the next five years — to speed the movement of people in and out of New York City and the State's other urban areas.

No single program of this scope has ever been attempted in the past. To help pay for it, the State's voters on November 7, 1967 approved a 2.5-billion-dollar bond issue.

Express highways are to link all cities of any size in the State. A fourth jet port is to be built in the New York City area. Every county in the State will get an airport of its own for smaller planes.

Mobile Masses

At the heart of this vast system, however, is emphasis on mass transit—commuter rails, subways, modern bus fleets — as the answer to traffic congestion in the cities themselves.

Under a master plan now taking shape:

All commuter rail lines, subways and bus lines in New York City and surrounding areas are to come under control of a State agency — the Metropolitan Transportation Authority — and are to be run as a regional network.

Spending of nearly 2 billion dollars by this network is to be focused on travel between outlying areas and the city's core.

Streets in Manhattan, center of the city's business and finance, will be torn up to make room for a subway running along the east side of the island. It's to be the first subway built by the city since the 1930 depression.

Existing subway lines, some dating back to the first years of this century, are to be extended outward into distant parts of the city. Fast, modern cars are to replace old ones. Dingy stations will be renovated.

Help For Commuters

Even more dramatic changes are ahead for railroads that carry commuters from surrounding suburbs into the city.

In the works are self-propelled electric cars capable of speeds up to 100 miles an hour, cutting travel time in half.

Cars on order by the Long Island Rail Road, which were bought by the State, are to be air-conditioned and carpeted. Seats will be contoured, with headrests. Interiors are to be brightly colored and well-lit, with a lavatory in each car . . .

. . . For people who ride the L.I.R.R. — 160,000 a day — new terminals will be built in Manhattan to provide more convenient access to the major centers of employment.

At present, these commuters can get off at only one terminal in Manhattan-Pennsylvania Station. Then they must go by subway or other means to offices. Soon they will be able to go underground directly to Wall Street on the same railroad.

(Continued)



7 Billions To Cure Traffic Ills— One State's Plan



New buses to replace worn-out fleets.

Assist for Air Traveler

High-speed rail service, under the plan being drawn up, will be extended directly to New York's Kennedy and La Guardia airports, now served by motor vehicle. It's not unusual for a taxi trip that should take no more than 20 to 25 minutes, from downtown to airport, to last well over an hour when highways are jammed.

Faster, more frequent service is also promised on two other rail lines carrying people from suburbs to the business district.

One is the commuter division of the New Haven Railroad, which links Connecticut with New York City. It will be taken over jointly by the State governments of New York and Connecticut, its stations refurbished and new equipment added.

Renovation is also in store for commuter lines of the New York Central that run along the Hudson River shoreline and farther inland.

Rail passengers, under present plans, will find more terminals scattered throughout the city at which they can transfer easily to and from subways.

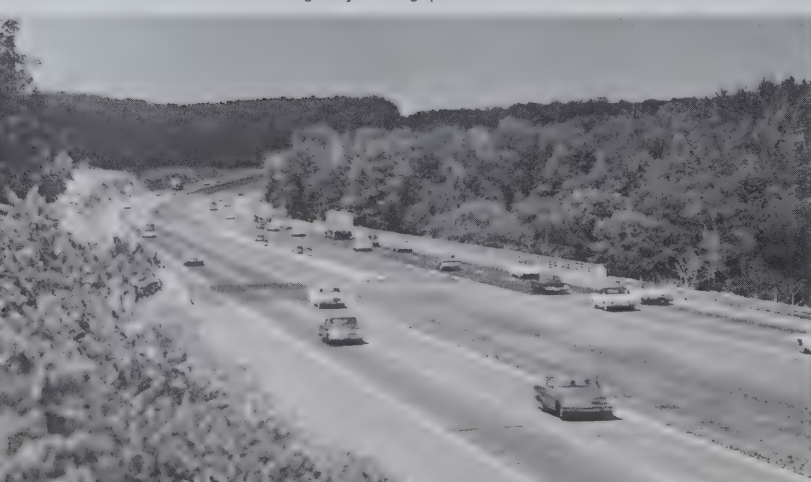
A string of parking lots, to be built ringing the city, is counted on to induce motorists to shift to rapid transit or bus for the ride downtown.

Says William J. Ronan, chairman of the Metropolitan Transportation Authority, "We've seen the last highway built from the suburbs to the center of New York."

Mr. Ronan adds:

"Rapid transit is more economical and doesn't eat up as much land or disrupt as many people. Even if you could build more roads, where would you find enough space in the city to park all the extra cars?"

More highways being planned to link cities in the State.



Superhighways, however, are being planned for areas beyond today's suburbs, such as the eastern half of Long Island. Commuter rail lines may run on the median strips of these roads.

Many auto users stand to gain, too, from the two proposed bridges that would link Long Island with Connecticut and with suburban areas north of New York City.

When the bridges are finished, drivers will be able to bypass dense city traffic, saving hours between Long Island and upstate New York or New England. There will be that much less traffic on the city's streets and roads.

Air-traffic Relief

The new jetport planned for the New York area, at a cost of at least 500 million dollars, is aimed at air congestion that has become as big a problem as traffic snarls on the ground.

A plane taking off or landing at the city's major airports is delayed, on average, 15 to 20 minutes. At Kennedy Airport, planes frequently must wait 40 minutes or more on the runways before clearance for takeoff.

To relieve pressure before the additional air terminal is in operation, the State wants to build or modernize 20 fields for smaller planes in the metropolitan area. The idea is to divert private and business craft that make up a fast-growing segment of air traffic.

At major airfields themselves, new runways for small planes would be built to take them out of the path of big, scheduled airliners.

In addition, existing runways will be strengthened, and big hangars added, for the "jumbo" jets that will be flying in the early 1970's.

Outside metropolitan New York, rapid transit by rail or subway is now being considered for Buffalo and Rochester, second and third-biggest cities, respectively, in the State.

For the most part, however, planners are banking on modernized and expanded bus lines to unravel traffic jams in urban areas other than New York City.

Local authorities will be able to get money to buy private bus lines in cities and suburbs, then integrate these lines into systems that serve an entire urban region.

Bait for Bus Users

To lure commuters out of autos, and into buses,

money will be available for such improvements in service as:

- New terminals, and new air-conditioned buses by the thousands to replace worn-out fleets. In Albany, the State capital, for example, 8 of every 10 buses is more than 10 years old.
- Highway lanes reserved for buses during rush-hour to speed travel.
- Parking lots on the fringes of cities where motorists can switch from car to express bus.

Local authorities, for the first time, will also be able to subsidize operations of bus lines out of general revenues. Fares thus could be held down.

Buses and autos alike will benefit from a speed-up in construction of urban expressways or arterial roads in almost every city in the State.

In fact, work on highways all over New York State is to be accelerated as part of the master plan. Most of the extra spending is earmarked for limited-access roads.

When construction is finished, New York will have a road network that includes at least two east-west super highways spanning the 315-mile width of the State, as well as five such north-south roads running to the Canadian border.

Help For Lagging Areas

Opportunities, as a result, are expected to open up for parts of the State that have lagged behind — such as the southern tier of counties along the Pennsylvania border, and the northernmost regions along the St. Lawrence River.

All told, the State is to spend nearly 4 billion dollars on highways in the next five years. That is a step-up of nearly 60 per cent from current rates.

For aviation, a State-wide system of airports is in the works. The plan calls for the construction of a total of 110 units, including at least one in each of the State's 62 counties. Most of the spending for aviation — 330 millions in the next five years — is ticketed for 90 new or improved airfields to handle private and business craft.

State officials say the volume of such plane traffic will double in the next decade. They regard access to airports, along with highways, as a key to attracting or keeping industries.

Where will money for the State's ambitious program be found?

Public Money

The groundwork was laid when voters approved the 2.5-billion-dollar bond issue. It was the biggest single State bond issue ever voted in the U.S.

The rest is to come from the Federal Government under highway, mass-transit and airport grants, from local governments, and from other State funds or bond issues. All told, the New York plan involves outlays of nearly 7 billion dollars by 1972.

"In order to save money," says a State planner, "we want to spend money as fast as we can. Stretching out spending only means you get hurt badly as land, construction and labor costs go out of sight."

The approach to the broad New York plan is one that planners, more and more, are saying is essential to the solution of the nation's traffic ills.

"A Total Package"

That approach is viewing the transportation problem on an over-all basis, rather than tackling it piecemeal.

"No longer can you just study the transit problem, or the airport problem, or the highway problem," comments a State transportation expert.

"Nor can you concern yourself just with the city and forget about the suburbs, or vice versa. It's the total package that is important."

New York's Governor Rockefeller put it this way recently:

"Now, for the first time, a State government can proceed with comprehensive planning and a total transportation system."

As State planners see it, their program will provide for rapid, as well as orderly, growth in New York business.

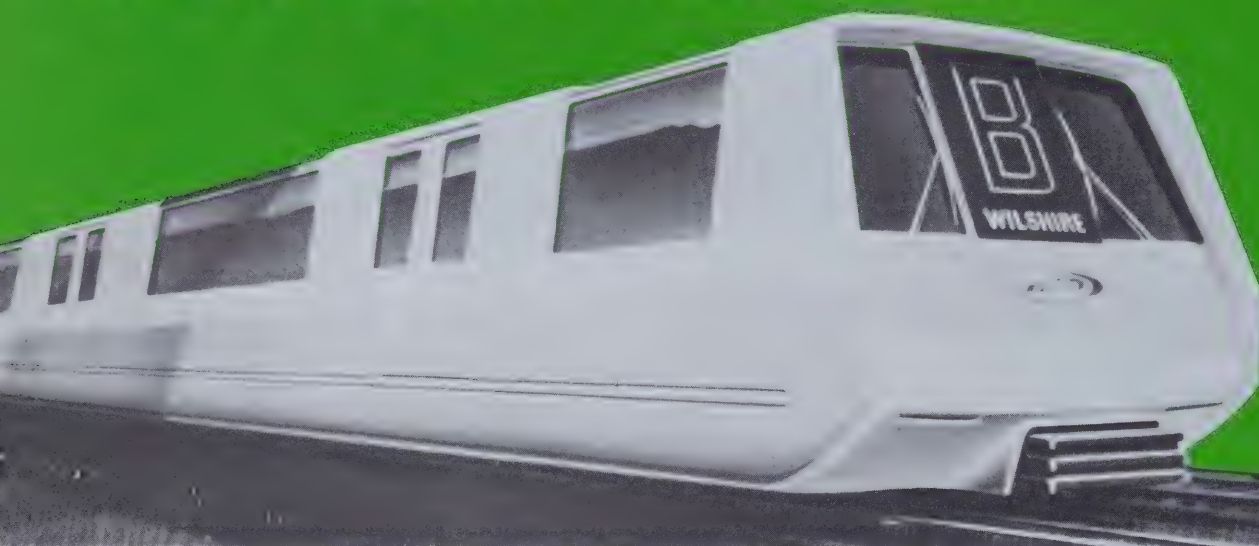
Official surveys estimate that 184,000 added jobs will be generated in the next five years by the transportation changes. In upstate New York alone, 2,000 new businesses and plant investments of 1.2 billion dollars are expected.

New York's transportation problems will not be completely solved by the project now getting under way, officials point out.

But, says Mr. Ronan, "what we're setting out to do in the next five years should break the back of our needs for the next 20 years."



SCRTD Issues Preliminary Report on Plan for Los Angeles Rapid Transit



FINANCING PLAN TO BE SUBMITTED TO VOTERS IN NOVEMBER

The rapid transit system proposed for the community, in its initial stage, is a 62-mile network of dual-rail, computer-controlled, ultra-modern electric cars. The cars will operate on grade-separated, exclusive rights-of-way — in subway, on skyways or at ground level (depending on the character of the area traversed). Designed primarily to relieve rush-hour freeway congestions, the system will provide fast, economical and dependable commuter service between areas of greatest commuter need and areas of greatest employment concentration.

Proposed Routes

The routes will link the San Gabriel Valley, the San Fernando Valley and the South Central Region as far as Long Beach with areas of concentrated employment and population comprising the urban core. These include the Wilshire Corridor, Hollywood, the Central Business District and the Southeast industrial area. Recent studies indicate that:

- More than 54 per cent of the present population of Los Angeles County lives within three miles of these priority-system routes.
- More than 65 per cent of all job locations in Los Angeles County will be served by these routes.
- Approximately 500,000 jobs are within walking distance of proposed Rapid Transit stations.
- More than 1,000,000 passengers will ride public transportation daily by 1980.

THE NEED AND THE BENEFITS

The urban core of the Los Angeles Metropolitan area contains most of the region's basic industry. Forty-five per cent of all jobs in Los Angeles County are in the urban core, but only 30 per cent of the workers live there — creating an army of at least 432,000 commuters who drive to the urban

core daily and return to their homes to spend their paychecks. The result is that each commuter creates a job-and-a-half in his home community, according to economists.

Freeways alone will not — and were not intended to provide the commuter mobility to keep the economic heart of the area, the urban core, healthy. The Division of Highways is reported as stating that by 1980 thousands of commuters will not be able to even get on the freeways that serve this congested inner area.

Increased Land Valuation

At least 10 million square feet of land in the Central City area alone will be better utilized when there is Rapid Transit — increasing future assessed valuation by at least 8 billion. This is equal to 100 million a year in future tax receipts. *Therefore, it will cost Los Angeles County taxpayers less to build Rapid Transit than not to build it.*

Benefits To Travelers Using The Rapid Transit System

- Home-to-work travel time will be reduced, with the savings invested in family activities; personal recreational, educational and cultural pursuits; or in civic or community affairs.
- Travel costs will be reduced — as much as 75 per cent compared with the cost of driving, parking and maintaining an automobile. Also eliminating the drive to work can save as much as \$70 a year in re-classified car insurance alone.
- Job opportunities will increase in addition to the hundreds of new jobs adequate mobility will make possible. Rapid Transit will greatly expand the number of jobs workers can get to — particularly those dependent on public transportation.

Benefits to Travelers Not Using Rapid Transit

- Freeway efficiency will increase. These are approximately two million person-trips daily estimated on the freeways and traffic arteries that parallel the proposed Rapid Transit routes. Of

these, an estimated 25 per cent of the rush hour trips would be diverted to Rapid Transit. The District Engineer of the Division of Highways estimated that as little as a 10 per cent diversion would result in more efficient freeway operation.

■ Traffic congestion on surface streets will be reduced. Diversion of a substantial percentage of commuter travel to Rapid Transit will reduce the volume of traffic on neighborhood surface streets which serve the freeway on-ramps and off-ramps, particularly in the school-travel hours and late afternoon shopping hours.

Benefits of Rapid Transit to the Community

■ Business and industry, seeking West Coast expansion, will choose an urban area with adequate transportation.

■ The general tax base will be enlarged through more efficient use of land space; higher intensity development in urban centers; and increased evaluation of urbanized area — with an accompanying reduction of the share of the tax burden on single-family residences.

■ A multiplying effect and use of public provided educational, cultural and recreational facilities will result, reducing the need for additional tax investment in this field.

■ Area productivity will increase through increased area mobility.

■ Job availability will increase for unemployed and underemployed along with a compensating reduction in tax-supported welfare programs.

■ A continued flexibility of residential choice will result, enabling families to live near mountains, beaches and similar attractive environments.

Vote in November

Community reaction, official and unofficial, will be received, analyzed and accommodated into the plans before the plans are officially finalized. This is in anticipation of a construction bond financing proposal to be submitted to the electorate in November, 1968.

Well-publicized informational meetings will be held throughout the District area so that the District proposal, in its preliminary form, will be thoroughly understood by the general public as well as officials of the affected cities.

Southern California Rapid Transit District Preliminary Report, October 1967.



Dr. Topping:

“... a link for cities, a bridge for congestion.”

The Rapid Transit system being designed by Southern California Rapid Transit District will be specifically calculated to serve the needs of the super city of tomorrow and at the same time meet the pressing needs of urban mobility today, University of Southern California President Dr. Norman Topping disclosed at RTD's Preliminary Report presentation.

The chairman of the District's Rapid Transit Planning and Finance Committee said, “Economist, sociologist and urban planners tell us that we are living in the evolving prototype of the 21st century megalopolis — a cluster of major metropolitan centers bound together into the super city.

“Each interdependent entity will draw its economic and financial sustenance from a super-urban core — a super concentration of financial, commercial and industrial activity upon which a larger percentage of total activity and total employment is based.

“The super city — unlike the cities of the past — is characterized by huge distances punctuated with regional islands of great and almost impenetrable congestion which must be both linked and bridged if mobility adequate to public needs is to exist.”

Dr. Topping noted that the unmistakable shape of this super city is already evident in Southern California, commenting:

“Collectively, the talents, energies and productive capacities of the Southland's millions of people; their combined buying power, their education, social and cultural advancement; their individual worth as human beings — all make an important contribution to the total community, a contribution that is largely dependent on the adequacy of public transportation.

“And the future adequacy of public transportation is largely dependent upon the speed, safety, economy and dependability that only Rapid Transit can provide across the distances and the congestion of our area.”

Southern California Rapid Transit District Newsletter—RTD In-Transit.

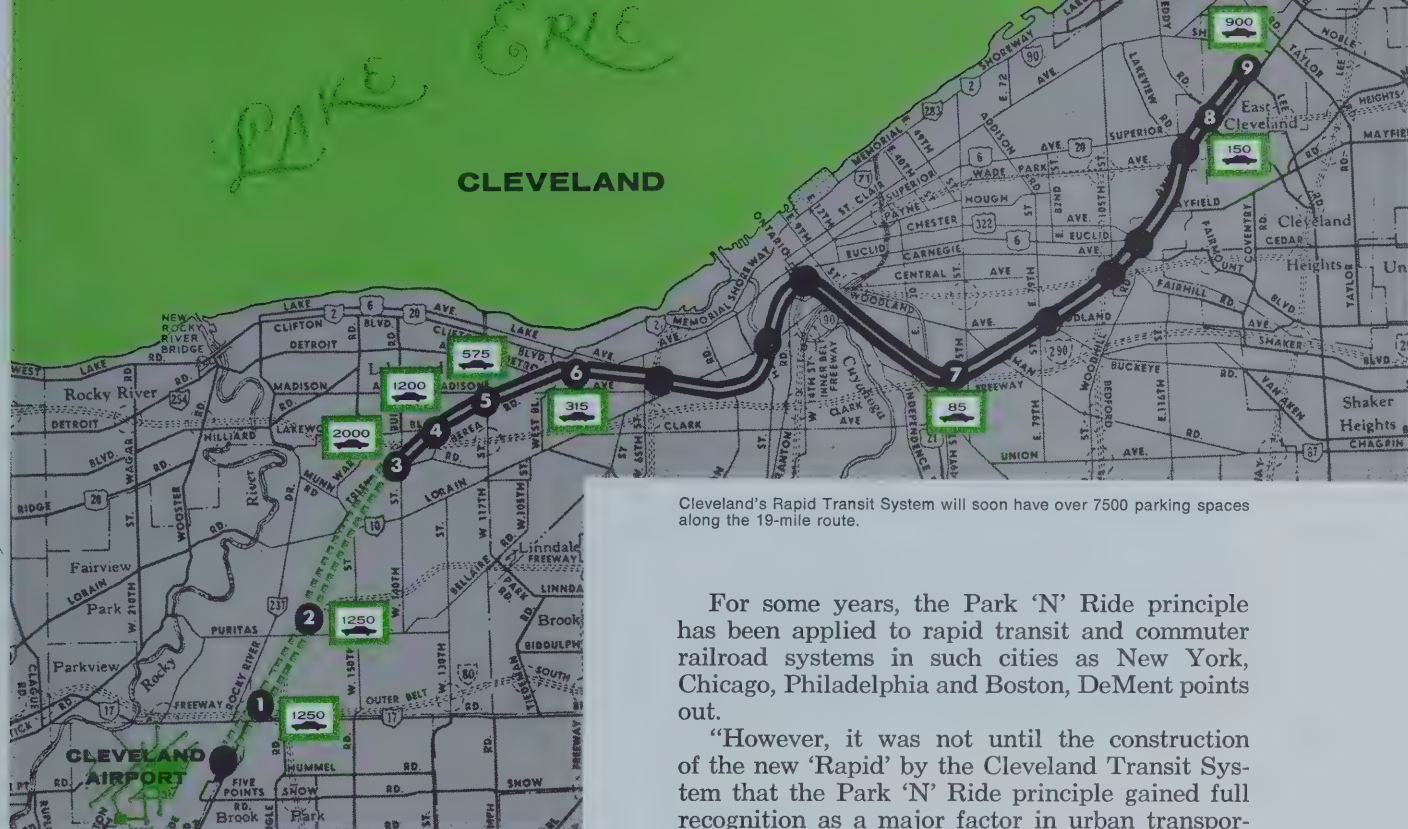


NEEDED: PARK 'N' RIDE



Above: Park 'N' Ride concept at Chicago Transit Authority's Congress Branch Terminal.

Below: At West Park Station, 2500 drivers use Cleveland's Rapid Transit each day.



Cleveland's Rapid Transit System will soon have over 7500 parking spaces along the 19-mile route.

For some years, the Park 'N' Ride principle has been applied to rapid transit and commuter railroad systems in such cities as New York, Chicago, Philadelphia and Boston, DeMent points out.

"However, it was not until the construction of the new 'Rapid' by the Cleveland Transit System that the Park 'N' Ride principle gained full recognition as a major factor in urban transportation," he explains.

Free and Metered Spaces

In Cleveland, seven rapid transit stations were provided with over 5,000 free parking spaces. An additional 2500 parking spaces are soon to be provided along a rapid transit extension being constructed to the Cleveland airport.

An Integral Feature

"The importance and acceptance of Park 'N' Ride now has been proven beyond any doubt," says DeMent. "Every new rapid transit system, as well as extensions to existing systems, will incorporate Park 'N' Ride as an integral feature."

As examples, he explains that the Toronto Transit Commission will provide 3,000 parking spaces along the Bloor Street subway extension under construction, that the new 10-mile rapid transit extension in South Jersey (Philadelphia area) will have nearly 5,000 parking stations at six stations, and that more than 16,500 parking spaces will be provided at 23 stations along the 75-mile rapid transit system being built in the San Francisco Bay area.

"There is no longer a question of the need for such facilities," says DeMent. "It is only a question of how much parking should be provided for any given rapid transit installation."

"It would appear very appropriate to direct more research funds to determine the fullest possible potential of the Park 'N' Ride concept," DeMent concludes.

"Furthermore, such research would be of great assistance not only to the rapid transit industry, but also to public officials and experts engaged in planning new and improved highways for urban areas. In the final analysis, Park 'N' Ride makes possible a coordination and balance of these two forms of urban transportation.

RESEARCH

Further research to determine the full potential of the Park 'N' Ride principle for combining the efficiencies of the private automobile and rapid transit in urban transportation has been suggested by George L. DeMent, President of the Institute for Rapid Transit.

In suggesting further Park 'N' Ride research, DeMent points out that this principle of providing large parking facilities at rapid transit and commuter railroad stations in outlying areas has "added a significant new dimension to rapid transit in growing urban areas."

Providing Balanced Transport

"Public acceptance of this principle permits the application of rapid transit in population densities which heretofore did not justify this form of mass transportation," DeMent explains. "This technique has made it possible to enjoy the efficiencies of both the private automobile and rapid transit to facilitate trips to and from the central city. It is proving to be an important factor in providing balanced transportation systems in metropolitan areas."

"It offers the motorist the advantage of avoiding high downtown parking costs and the freedom, by taking rapid transit, from the congestion of inner-city thoroughfares," he continues. "A variation of this principle is Kiss 'N' Ride whereby the motorist is driven to the rapid transit station by another member of his family and dropped off to continue his journey by rapid transit."



On a bad day

The old joke is no longer quite funny; some days, it seems, you just can't get there from here . . . but the Delaware Valley is striving to meet modern transit needs and the Port Authority is doing its share.

Lyndon Baines Johnson, who can pretty much get where he wants when he wants, recently admitted that the inability of too many of his fellow Americans to enjoy the same privileges has become one of the great problems of our civilization.

A nation which is talking about transporting men to the moon should be able to move them from Bryn Mawr and Haddonfield and Ridley Park with speed, convenience and comfort, and do it at a reasonable price. In fact, according to the experts, this must be done if we expect our cities to be anything more than vast parking lots ten years from now.

The area around the Delaware River Ports is ideal to illustrate the problems facing urban centers across the United States. The stretch of Southern New Jersey within 25 or 30 miles of Philadelphia, in fact, is a foreshadow of *Megalopolis*, the gigantic cluster of urban and industrial centers which will one day stretch unbroken from Maine to the District of Columbia. Because it lies in the 100 mile span between the nation's largest and fourth largest city, it must handle the movement of millions of people each year. The population is expected to rise by 40 percent in the next ten years while vehicle registration increases almost 50 percent.

Regional Planning

The Delaware Valley Regional Planning Commission has proposed a 20-year transit plan for the area. The plan, which could cost as much as

\$3.5 billion, includes 31 new expressways, five transit lines and five subways.

The Delaware River Port Authority, which maintains the two major spans providing access between Philadelphia, its suburbs, and South Jersey, is right in the middle of efforts to solve current problems.

Some immediate solutions are already underway to relieve congestion on the Benjamin Franklin Bridge.

The real requirement, however, is more bridges. DRPA engineers feel that at least seven spans will be needed by the end of the century and the Authority has already announced plans for two new bridges to serve the area.

Transportation Leadership

Despite these efforts, the final solution to urban commutation difficulties has to be an efficient and organized rapid mass transit system. One of the reasons for the Delaware Valley's leadership in meeting transportation problems has been Philadelphia's famed "operation" arrangements with the Reading and Pennsylvania railroads through which the city subsidized low-cost, regular commuter train service. Key activities underway currently in the city include the projected extension of the Broad Street Subway both north and south and plans for an underground connection between the midcity Reading and Pennsy terminals.

But again, there is need for new facilities, and again, the Port Authority is meeting the need.

\$83 Million High-Speed Transit System

The DRPA, which presently maintains a rail commuter line from Camden to Philadelphia, has undertaken the construction of an \$83 million dollar high-speed transit line between Lindenwold,



Photo Courtesy of DRPA LOG, Delaware River Port Authority

you can drive forever

N. J. and Philadelphia, a project scheduled for completion in 1969. The system will cover 14.5 miles and is the first high speed commuter line to be built in the East in 50 years.

In the words of DRPA Chief Transit Engineer Robert B. Johnston, regardless of the need, "people will choose rapid transit only if it offers to the rider a significant advantage in speed, convenience, comfort and cost over alternative means of transport." Therefore, every effort is being made to make the new line one of the finest in the nation.

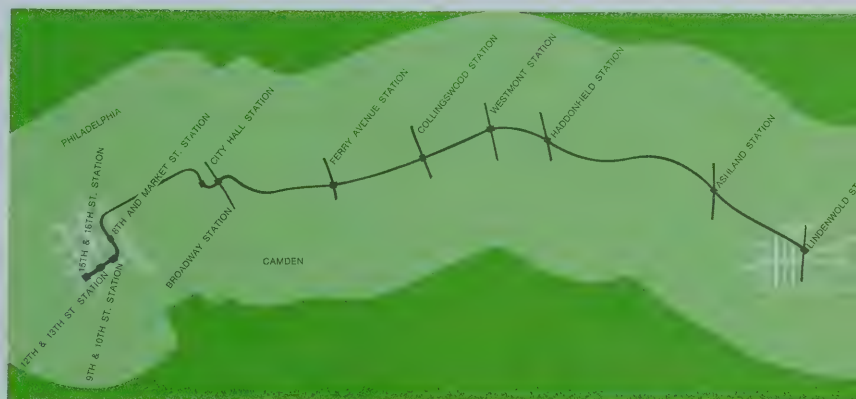
Seventy-five cars are being purchased for the line, and all are engineered for a maximum operating speed of 75 miles an hour. The cars will be air-conditioned and have fully automatic heating systems. They will be fully insulated for temperature control and reduction in noise level, and the seats will be upholstered and of sufficient dimensions to accommodate most passengers comfortably.

5700 Parking Spaces

Similar attention will be devoted to the entire system. Large parking lots having a total capacity of 5700 cars will be included along with all new stations. There will also be adequate "feeder" facilities for bus connections. Right-of-way embankments and station areas will be landscaped to conform harmoniously with their surroundings.

When it is completed, the Lindenwold line is expected to serve 60,000 commuters daily with trains running at two-minute intervals during peak hours.

These steps are only a part of the extensive effort across the Delaware Valley to meet transit needs, and local efforts in turn are only a part of a growing national recognition that the population and automobile explosions are offering new challenges to our society.





Winter storm ties up traffic in down-town Chicago.



Chicago Transit Authority patrons beat congested traffic during previous storms.

CTA goes in the snow

By George L. DeMent
Institute for Rapid Transit
Newsletter

In late January and early February of last year, severe snowstorms struck most of the cities with rapid transit and commuter railroad systems. All forms of transportation suffered from these wintry blasts. But the degree of interference varied from one form of urban transportation to another.

In all rapid transit cities, surface bus operation was seriously impaired, if not completely blocked. Public and private transportation on highways and streets was critically impeded, with many streets made impassable by drifts and stalled automobiles. Rapid transit and commuter railroads also had their problems, but nevertheless experienced only relatively minor delays in spite of unprecedented numbers of motorists flocking to rail systems.

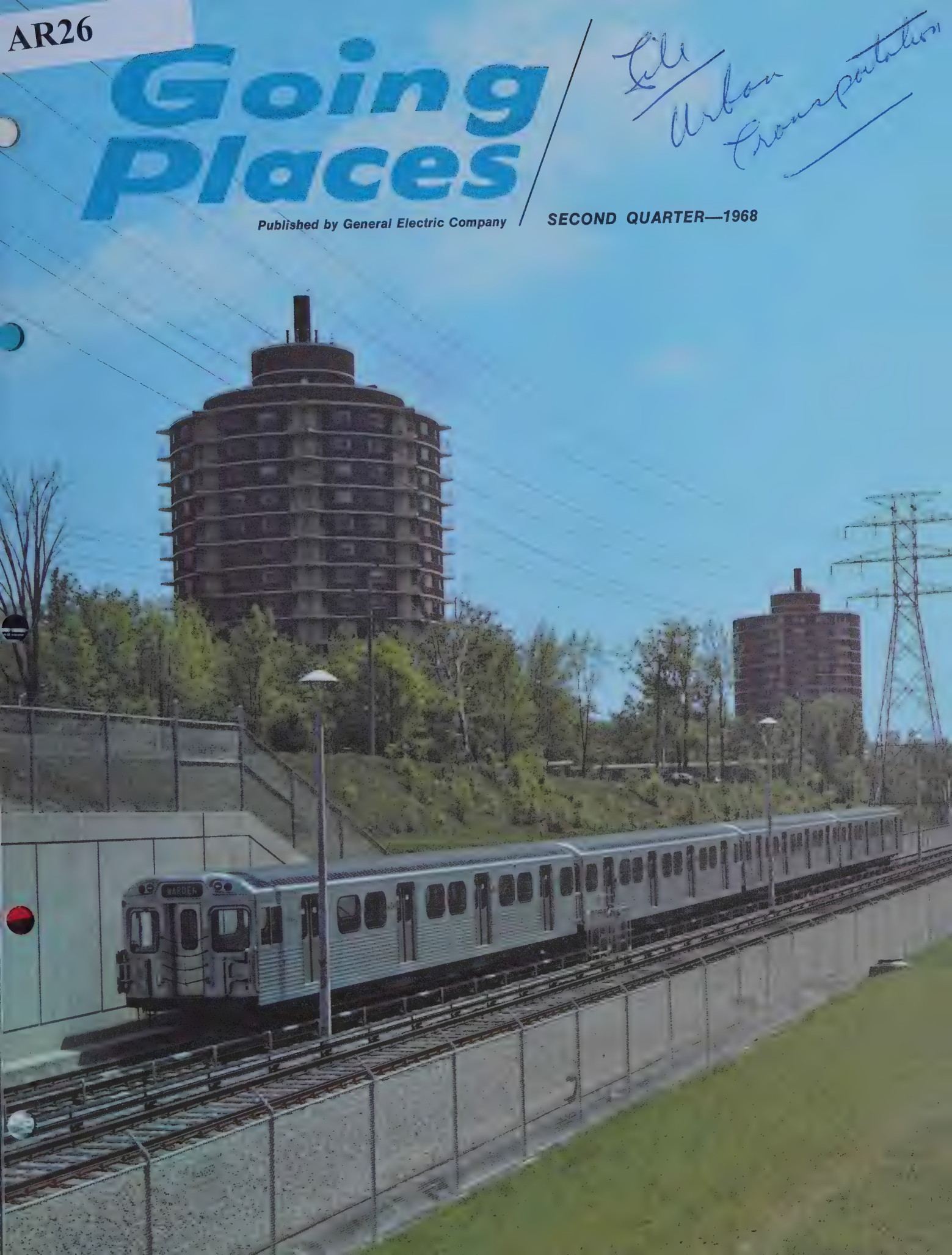
The advantage of private right-of-way, grade-separated transportation facilities, such as those provided by rapid transit and commuter railroad services, was demonstrated very conclusively in Chicago, especially on Friday, January 27, 1967. On the morning of that day, residents of the Chicago metropolitan area awoke after a record-breaking accumulation of 24 inches of snow. But there still was considerable activity in Chicago and especially in the downtown area. The significant point is that the only way of reaching the downtown area was either by rapid transit or commuter railroad. In other cities where storm conditions were not as severe, my associates in the industry report that rapid transit and commuter railroad facilities also stood the test better than other forms of transportation.

ALL-WEATHER RELIABILITY

Obviously, no one would contend that a rapid transit system should be built solely for the occasional snowstorm. The all-weather reliability of rapid transit is only one of a number of advantages justifying rapid transit for an urban community large enough to support this form of mass transportation. The most important advantage of rapid transit is the ability to move great numbers of people at speeds and with a regularity of service that are not possible with other forms of urban transportation.

Does this mean we should have only rapid transit facilities? Of course not, but the recent snowstorms demonstrated that any urban community able to justify rapid transit on the basis of the primary factor mentioned above would gain the additional assurance that the city would be kept alive in such emergencies.

GENERAL  ELECTRIC



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Going Places

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SECOND QUARTER—1968



BALANCED TRANSPORTATION BRIEFS...

Dedicated to the
Promotion of Balanced
Metropolitan Transportation.

SCRTD ISSUES FINAL REPORT

The Southern California Rapid Transit District recently issued its final report on the planning and preliminary engineering for the Los Angeles metropolitan area rapid transit system.

The report contains a summary of major findings which includes route and alignment information, facilities and systems design and estimates of capital cost.

The recommended \$2.2 billion five-corridor system consists of 89 route miles in five corridors with a total of 66 stations. Plans for a four-corridor system were also submitted.

The trains will be powered for a top speed of 75 mph with a design load of 1000 passengers in an eight-car train. Recently de-

veloped automatic train controls will permit safe operation at these speeds with headways as close as 90 seconds. These operational capabilities will provide a capacity with normal loading conditions of up to 40,000 passengers per track per hour.

Allowing for one year engineering lead time prior to the beginning of construction, the total design and construction period for the recommended five-corridor system will be 8 years. Based on the assumption that final engineering will commence in January, 1969, the system would be completed and in full operation by the end of 1976.

*Final Report to The Southern California
Rapid Transit District
May, 1968*

MARYLAND'S GOVERNOR AGNEW PROMISES STATE FUNDS FOR RAPID TRANSIT DEVELOPMENT

Governor Spiro T. Agnew believes that state financial assistance in building rapid transit facilities in Maryland "is desirable and necessary."

In a letter to the Washington Suburban Transit Commission, the Governor pledged to establish a special committee to study methods of providing "meaningful state participation" in Maryland's rapid transit projects.

"Based on the information and recommendations developed by this committee, we hope to adopt a long-range program to assist the metropolitan regions in Maryland in solving their mass transportation problems,"

Agnew wrote WSTC Chairman Cleatus E. Barnett.

Agnew said his administration "has long recognized the need for a balanced transportation system," including highways and rapid transit facilities, in Montgomery and Prince George's Counties, which flank the District of Columbia, and in the Baltimore metropolitan area.

"The safety, comfort and convenience of the vast majority of Maryland citizens demand and require the development of rapid transit facilities in these two areas of the state," the Governor noted.

*Washington Suburban Transit Commission
News Release*

COVER: Apartments rise along Toronto's new subway extension.

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**Going
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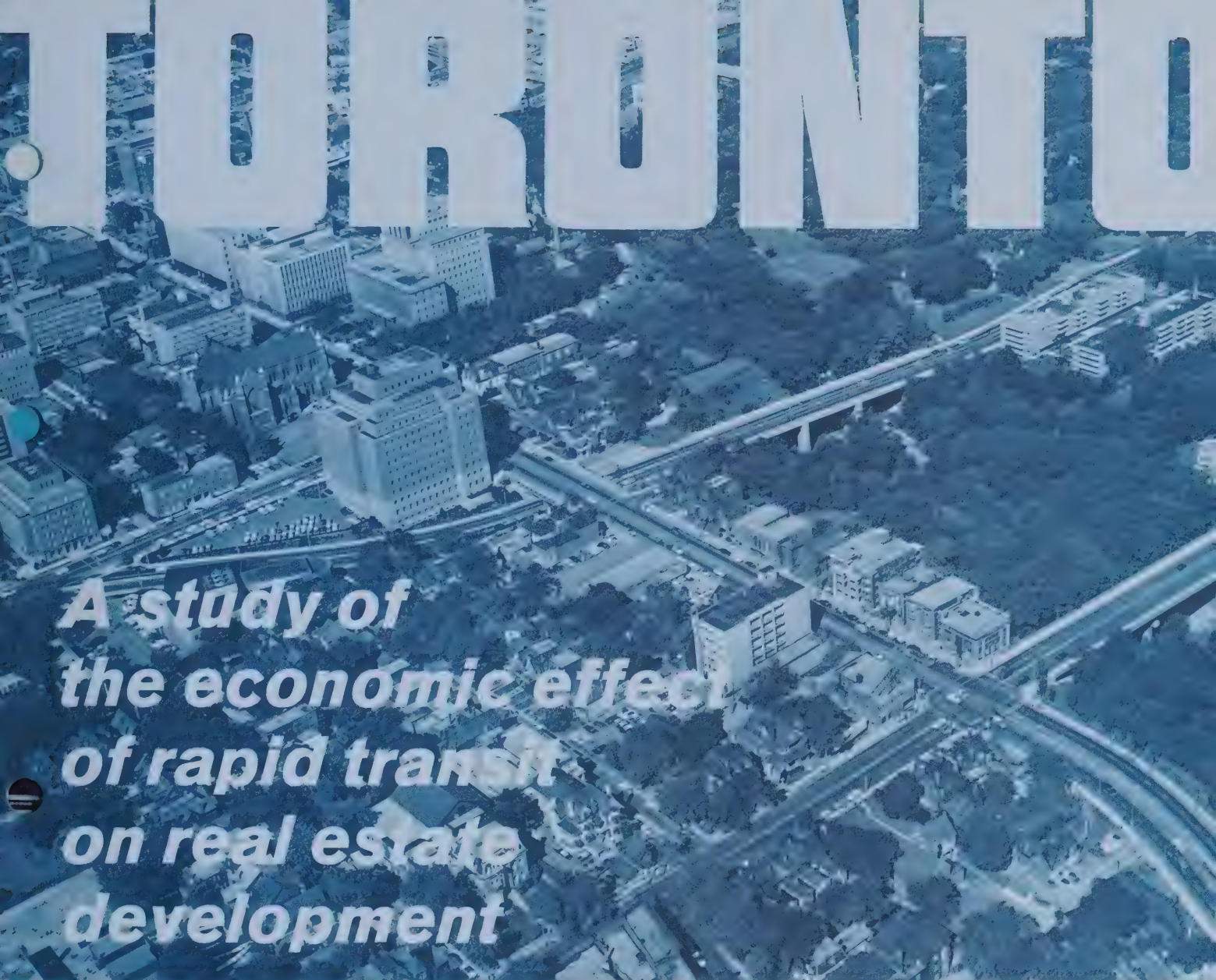
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Fred J. Borch, Pres.; R. M. Estes,
Sec'y; J. D. Lockton, Treas.
570 Lexington Ave., New York, N. Y.



A study of the economic effect of rapid transit on real estate development

"For any major urban area, rapid transit as the base of a balanced transportation system cannot be equaled in its ability to create and maintain property values. If an urban rapid transit system never earned a dime, it would pay for itself many times over through its beneficial impact on real estate values and increased assessments."

With its incorporation on January 1, 1954, the Toronto area became the first community in the western hemisphere to give political recognition to the metropolitan area as the newest form of urban settlement created by modern industrial society. The municipality of metropolitan Toronto was created as a federation of 13 separate municipalities, each retaining local autonomies and responsibilities, but passing over to the municipal government the responsibilities for major regional services. Among these was public transportation. With the incorporation, the Toronto Transportation Commission passed from existence; in its place is the Toronto Transit Commission.

Subway Ignites Building Boom

The major achievement in public transit in metropolitan Toronto has been the successful creation of a subway system. Even in 1942, it was realized that the growth and expansion of Toronto soon would result in a situation which would be beyond the capacity of a surface street car route on Yonge Street, the most heavily traveled route. Separation of street car and automobile traffic was the obvious solution, and the commission began to study a rapid transit system for the city.

On March 30, 1954, Yonge Street subway was opened. The total length was 4.5 miles, of which approximately three miles was underground. The total cost of this subway including right of way, rails, electrical distribution system, signal system, and rolling stock was \$67,000,000.

This small investment in a subway system ignited a \$10 billion development explosion along the route from Front and York Streets to the northern terminal, Eglinton Avenue. The ap-



praised value of all the land and facilities in metropolitan Toronto is now \$50 billion. An appreciation of \$15 billion in physical value has been added in the last ten years; and of this, two-thirds is attributable to the existence of the Yonge Street subway. Properties along the subway route doubled and tripled, sometimes increasing as much as ten times their original value. Land sales at \$125 to \$150 per square foot near the downtown stations became common. Between 1952 and 1962, the increase in tax assessment in districts contiguous to the Yonge Street subway line was 45% in the downtown area and 107% from College Street to Eglinton Avenue. The assessment increase for the rest of the city during the same period averaged 25%. On this basis, the Yonge Street subway has earned enough new tax dollars to pay its annual amortization costs.

Another \$2 billion in building construction is in the planning stages or underway in downtown Toronto. There is no doubt that the subway to downtown and the new \$35 million City Hall are speeding the redevelopment. Each year between two and three million square feet of new office space and 5000 apartments, of which 3000 are within walking distance of the subway, are being added to Toronto's skyline.

Hundreds of large residential lots, 175 feet wide and 200 feet in depth, were rezoned to accommodate high-density apartment buildings. The apartment land boom brought as much as \$4000 per suite to speculators. Rates offered to homeowners were \$1000 to \$2000 per front foot. Many families who bought modest houses at \$15,000 to \$25,000 sold them to developers for \$50,000 to \$75,000. Downtown land is selling at up to \$200 per square foot, or at the rate of \$8.7 million per acre.

Therefore, it can be concluded that a subway has a tremendous impact on land use, and consequently on land values.

Toronto Extends Rapid Transit System

Less than five years after the opening of the Yonge Street subway, plans were underway for the Bloor-Danforth-University subway, an eight-mile east-west line with a two-mile extension beneath University Avenue to connect with the Yonge Street subway. Construction began in 1959 and the University extension was opened early in 1963. The eight-mile crosstown section of the \$200 million project now is completed and is assuming a major role in metropolitan Toronto's balanced transportation system.

But there is no lull in subway construction activity. Two more extensions, which recently opened, will take the subway into suburban districts. The cost of these extensions will total \$77 million. With their recent completion, the Bloor-Danforth line is now over 14 miles long, and metropolitan Toronto will be crisscrossed by 21 miles of modern subway lines.

The city section of the Bloor-Danforth line currently carries 25,000 passengers hourly. It is expected to increase to 35,000 and then to 37,000 passengers hourly with the opening of the extensions. The subway line is designed to carry 40,000 persons hourly—triple the number of passengers formerly transported on the Bloor-Danforth street car and bus service.

In the 12 years it has taken to build the 14.26 mile Bloor-Danforth subway line across metropolitan Toronto, the number of vehicles on the streets has more than doubled to an estimated 700,000. The Toronto Transit Commission hopes that the economy, convenience, and speed of the subway will lure up to 15% of the Etobicoke and Scarborough motorists away from rush-hour jams and the frantic search for downtown parking space. (It is interesting to note that several months after the Yonge Street subway opened in 1954, the Commission found that 13% more transit riders were using the subway than previously



Subway train leaving Old Mill Station in Toronto

had used the street car and bus system.)

Detailed planning now is in progress to add a 4.5 mile, \$87 million northern extension to the Yonge Street subway, and acquire the right of way for a possible future 1.25-mile extension to Finch Avenue, at an estimated cost of \$2 million to \$2.5 million. A six-mile rapid transit line also is proposed in connection with the Spadina Expressway.

City Recommends Zoning Changes

Money was rolling along the tracks even ahead of the trains. New business and higher assessments are following the transit lines. Properties adjacent to the east-west subway which were valued at \$250 million before the project was announced, already have doubled in value to \$500 million. The subway's influence on rezoning along the line is expected to generate \$2 billion in office and apartment construction in the next ten years.

The City of Toronto Planning Board recognized the impact on the air rights and land use adjacent to the Bloor subway with a comprehensive report recommending significant zoning changes. These changes, if carried through in full, will double and triple the market prices for land almost overnight. Larger sites than actually needed for rights of way were assembled to attract larger development proposals. In many of the prime locations, the subway structure was reinforced to permit additional construction above it. In many instances the best potential use of the lands is realized by their development jointly with adjacent, privately-owned property. The manner of the disposal of these lands, as well as the way in which they are used, is important to the city.

Plan for Regional Growth

A logical long-term plan for regional growth would be to establish a system of efficient com-

muter train lines and to channel development of satellite cities to key points on this system.

Within a 30-mile radius of Toronto, development of satellite cities on low-priced marginal tracts will open thousands of acres of land. With their development, it will become common for commuters to travel 50 to 75 miles to work each day. Provision for adequate transportation services to connect them with metropolitan Toronto will be an important aspect of their development.

Transportation and Urban Development

In Toronto it has been found (and it has been borne out by regulations suggested in the San Francisco Downtown Zoning Study) that proximity to a subway station has profound effects on business and land uses, especially those arising from housing, manufacturing, and commerce. The amount and intensity of new development and the volume of retail sales at a given point on the rapid transit line are directly proportionate to the passenger traffic to and from the nearest subway station.

Transportation and development must be planned jointly. Ease of access encourages development, and development generates movement. A plan for one makes sense only if integrated with an appropriate plan for the other. The maximum integration of all forms of transportation (transit, train, car, truck, etc.) must be sought to achieve the best use of each and the best overall results. A system must be established that will permit continuing growth without congestion. Downtown, the heart of the region, must be accessible from all parts and the entire region should offer its residents attractive surroundings in which to live and work.

G. Warren Heenan
THE APPRAISAL JOURNAL
April 1968



Gatwick Airport showing rail connections to terminal.



Heavy traffic congestion at Heathrow during rush hour peaks.

London's airports to use rapid rail

Future "Jumbo Jets" force new facilities for passenger handling.

Heathrow Airport, with an area of 2718 acres, is located at Hounslow, Middlesex, 15 road miles west of London. It is now the busiest airport in the world outside the United States and handles more passenger traffic than all other airports in the United Kingdom combined. A total of 56 airlines operated scheduled services from Heathrow during the year, providing flights—"direct or through"—to more than 150 destinations which include nearly every important city in the world.

Rail Links

It is almost self-evident that the country's principal airport should have fast rail links with the capital city to reduce road traffic congestion

after the introduction of the "Jumbo Jets." At present, the average car or taxi load at Heathrow is 1.8 passengers, and without coaches or trains, a Boeing 747 carrying 360 passengers would require 400 cars for the full arriving and departing loads, and these cars would occupy more space than the aircraft itself. The limitations on road access will progressively hamper coaches as well as cars and taxis, and there is, therefore, a growing need for an attractive method of mass travel which is independent of the main roads and which would provide quick and convenient routes for passengers and those employed at the airport.

The British Airports Authority, therefore, began discussions with British Rail and the London Transport Board with a view to achieving two rail links into the Central Area. One line would be a spur from the Feltham line which would provide 25 minute express service into Victoria, the transportation center in London, and the other, an extension of the Piccadilly Underground line from Hounslow West station.



primary route from Central London to Heathrow International Airport

links with city

Gatwick Now Using Rail Access

Gatwick Airport, located 28 miles south of London, and now the second largest airport in the United Kingdom in terms of passengers handled, was the first airport in the world to combine rail and trunk road access in one co-ordinated passenger terminal. British Rail provides a service of fast trains from London and other parts of the south with service to and from London's Victoria Station every quarter of an hour for 14 hours a day throughout the summer. An Authority traffic survey showed that on a peak summer Sunday, 44 per cent of Gatwick's departing passengers used the rail link.

The Authority has striven to develop the growth of passenger traffic at Gatwick, partly to offset pressure at Heathrow, but much more important, to use to the full the very fine facilities offered by the modern Passenger Terminal and to smooth out the peaks and troughs of passenger traffic.

Excerpted from British Airports Authority Report And Accounts 1966-67

Growing with the jets

On August 25, 1919, a converted wood-and-fabric World War I military plane took off from a Middlesex field outside London. With some newspapers, a few jars of Devonshire Cream, a small consignment of leather, and a solitary passenger aboard, the flight inaugurated commercial air service between London and Paris. Today, near the same site, Heathrow Airport, already the largest outside the U.S., barely manages to keep pace with the mounting tide of skyway travelers.

Looking ahead to even more difficult days, when jumbo jets carrying as many as 490 passengers start landing, Heathrow has announced a \$25 million expansion plan. A T-shaped pier with telescopic ramps, capable of loading and unloading seven giants at a time, will be waiting for the Boeing 747 jets, which should be coming down the runways by December 1969 or early 1970. In addition, passengers are to be whisked to and fro on moving sidewalks that will connect boarding lounges with the airport's departure building and a new arrivals terminal, both situated approximately 300 yards away.

Through improved ticketing, baggage handling and other services, Heathrow should be able to cope with some 900 travelers every 15 minutes, according to the plans. To speed up the trip to the center of London, which now takes about 45 minutes and \$10 in unmetered cab fare, British Rail is going to construct a line between Victoria Station and an underground stop at Heathrow. Without such a rail link, experts have predicted, the disembarking passengers from each of the new jets would create a traffic jam one mile long.

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Nature Helps Caracas Plan Transit System

*Auto chaos dictated a Metro for Venezuela's Capital.
The lay of the land made routing easy.*

Construction will start this year on the initial 4.4-mile stage of a steel-wheel steel-rail transit system, here in the capital of Venezuela.

Most of the city is squeezed into an east-west valley that's about 2.5 miles wide and some 15 miles long. While Caracas is now 400 years old, most of its growth has occurred in the last three decades.

As of Jan. 1, population is estimated at 1.85 million people. There are more than 200,000 vehicles in circulation, and about one-tenth of these are taxicabs. In order to relieve the congestion, Caracas embarked on an immense program of expressway construction, which did little except to increase the congestion in the downtown area.

However, the restriction of the city within narrow confines makes rapid transit routing easy to plan. All that was necessary was to route it right down the center of the valley, with feeder transportation systems such as connecting buses, bringing in the traffic to stations along the center axis, which is seldom more than a mile away from the mountains on either side.

Project Mostly Venezuelan

Venezuela is fortunate, among South American countries, in having a number of young, competent engineers. Of the staff immediately engaged on the rapid transit project, only 15 of the 120 members are North Americans.





To train these Venezuelan engineers, they have been sent to the United States and elsewhere to study rapid transit systems.

As a matter of fact, the entire project is far more Venezuelan in character than is usual in developing countries, where such projects are normally handled through contracting with outside manufacturing consortia or consulting firms for the complete project.

In the beginning, the Ofician Ministerial del Transporte studied the situation thoroughly, then determined the needs of Caracas. Only then were the services of outside agencies considered for development of detailed plans, equipment procurement, etc.

Balanced Movement

Transportation demand in both directions has been developed by this multi-center, linear development along the east-west axis of Caracas. A recent traffic count on the Autopista del Este showed 5200 persons traveling toward downtown (west) and 5160 persons traveling toward the east.

A combination of bus service, taxis and *carros por puesto* (jitneys) now serves the city and is highly inadequate to meet the demand. An estimated 2.7 million trips are made on a typical day.

Buses—some private, some municipal—carry 800,000 passengers daily over 70 different routes. The jitneys carry about half a million passengers over no less than 60 different routes, using some 9000 cars for the service during the busy parts of the day. Traffic studies indicate more than 1,200,000 trips per day by private autos.

The resultant traffic jams are monumental in scope. A recent study in three different areas showed traffic volume in excess of road capacity by 8%, 17% and 28% respectively, resulting in average speeds well below 10 mph.

The integral transportation plan, with the Metro at its heart, will eventually include new highways, street improvements, bus and jitney service improvement—and relate them all.

A 20-mile System

Plans call for a 19- to 20-mile system, although work is being confined initially to construction of the east-west 12.5-mile line in three stages: The 4.4-mile segment now ready to go into construction comprises the first stage, which is set to open in 1972. The second stage is due to open in 1973 and the third in 1974.

The east-west line as a whole is estimated to cost 1200-1500 million Bolivars, or \$266-\$333 million, including rolling stock and equipment.

Based on the present studies, the route will have surface yards at both its east and west terminals. An arroyo that leads through the city for some distance will be utilized for perhaps 5% of the total distance, but most of the system will be underground.

The present plan for stations has been worked out to almost ideal specifications for these two functions. At present, it appears that there should be no difficulty in maintaining a rate of speed, including station stops, of at least twice that of existing transportation means.

One of the things that was taken into serious consideration was the fact that the area had recently been subjected to a rather severe earthquake. This led to studies of seismic design requirements for tunnels and buildings, as well as complete studies of the soil characteristics.

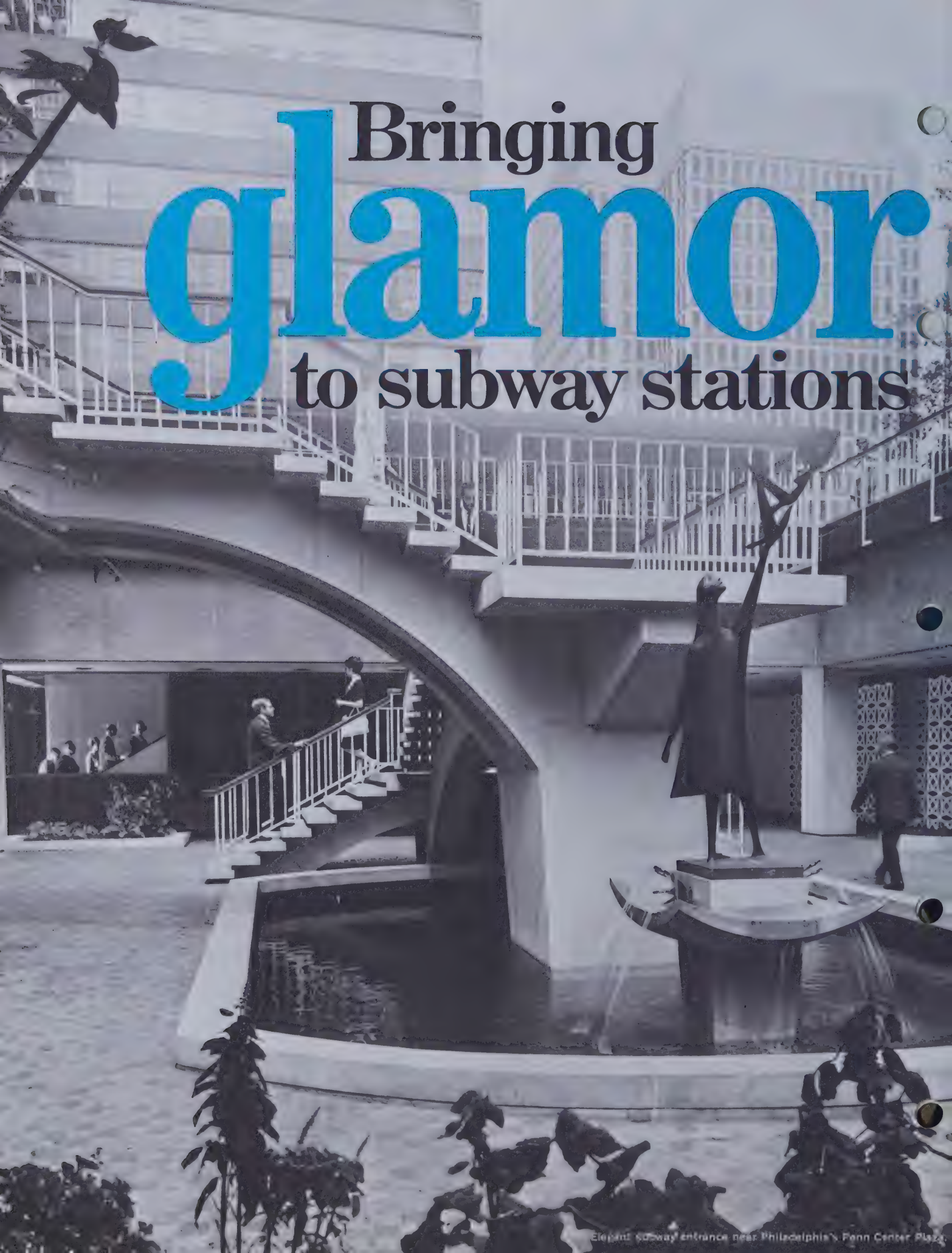
One-half Million Passengers Daily in First Year

Studies indicate that the 12.5-mile east-west line will serve half a million passengers daily in the first year it is opened.

This 12.5 miles sometimes takes as long as an hour and a half to negotiate on the surface by automobile. The metro is expected to do it in half an hour, or less, including station stops.

As well as being geared to alleviate the present almost intolerable traffic situation, the project is future-oriented. Within its narrow geographical limits, Caracas is expected to have a population of 4 million by 1990. The entire system is being built with this in mind.

Bringing glamor to subway stations



The need to compete with the automobile has not been ignored by the designers of the newer Canadian rail systems (Toronto, Montreal), or by the designers of the two major forthcoming U.S. systems in San Francisco and Washington, D.C. Architectural design is getting major attention, as the accompanying pictures show.

Various amenities are being added in the new rail transit systems to make them both more pleasant and safer.

■ Rather than the forbidding turnstile, open pass-gates are being employed. For the Washington, D.C. subway, consulting architect Harry Weese proposes "that riders be given the benefit of the doubt. The traditional detention-type barriers and exit turnstiles should not be used; instead, open pass-gates with electronic closers (to prohibit non-payers from entering) are recommended."

■ Escalators will replace most flights of stairs, particularly the longer lifts.

■ In the Washington, D.C. system, kiosks at which passengers can get change and route information will be placed to command a view of the entire station—mezzanine, platforms and escalators to the street—for security.

■ Most of the lighting is indirect, reflecting from ceilings and walls and thus though bright, is not harsh. A high level of light makes the subway more inviting by approximating the light level outside and discouraging vandalism and violence.

■ Stations and passageways will remain open to the outside, so far as possible. (See illustration of Philadelphia system.) The idea is to orient the detaining rider to his above-ground location.

All of these changes, plus improved graphics (signs, lettering, etc.) and materials for floors, walls and ceilings, are designed to make subways a mode of preference—not necessity.

History of Passenger Stations

It is interesting to look at the history of passenger stations for the various modes of transportation. Architect Harry Weese notes that for a few decades in the late 19th and early 20th century, a city's railroad station was among its major monuments. "In some respects it was the equivalent of the medieval cathedral"—for the station was a major center of city life.

Today, most of these old railroad terminals are nearly empty. But in their eminence of 50 years ago, they find a 1967 counterpart in the most dramatic of the airport terminals, such as the soaring Dulles so far out of Washington, D.C. that few use it and the birdlike TWA terminal at New York's John F. Kennedy airport.

In the heyday of the railroads, the subway was built, but without amenities. The subway stations in New York suggest that the designers conceived of them as underground terminals for express street-cars.

Moscow's subways of the 1930's broke sharply with this minimum-amenities concept; the most glamorous Moscow subway stations have crystal chandeliers in high-ceilinged elegance. For 30 years they have been an anachronism, but no longer. Montreal's year-old system features some stations two and three floors high and handsomely tiled. These stations are simpler and more brightly lit than Moscow's in the modern manner.

Good Transit Is Good Politics

When the bulk of Montreal's Metro subway opened in October 1966, it was an immediate hit. Patronage on the city's buses has been about 10 per cent higher than expected, even after subtracting the bulge caused last summer by Montreal's World's Fair, Expo '67. More people are riding buses because of their heavy use as feeders to the subway. The unexpected spurt in bus riding (it had been expected to decline as the subway took over key bus routes) forced the city to buy 100 new buses.

Even prosperous Montrealers take the Metro subway. *Fortune* reports, "service is so swift that many businessmen are relaxing back to a fine old European custom: going home for lunch."

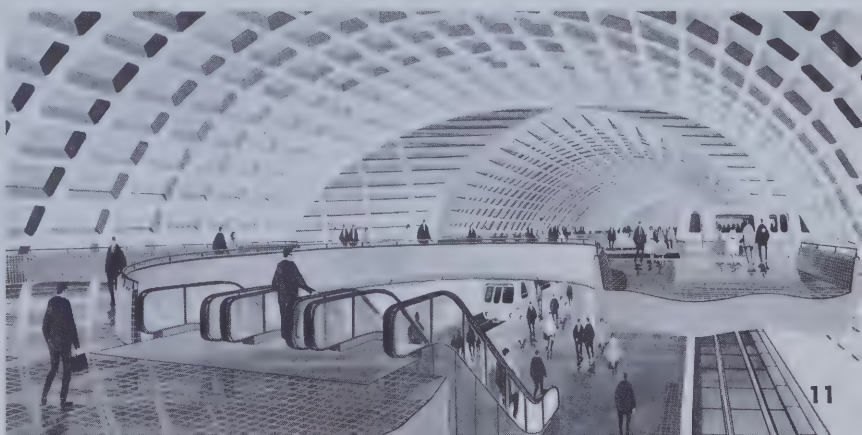
This popularity is reflected in another way. In Montreal's 1960 mayoralty election, candidate Jean Drapeau made his pledge to build the long-contemplated city subway the key plank in his campaign platform. It is interesting to note that because of such smash hits as Metro and Expo '67, Mayor Drapeau was re-elected last fall by an unbelievable 94 per cent of the vote.


Conclusion

Speed, comfort and cost of the ride remain the prime factors influencing the popularity of rapid transit. And designing these into a transit system is primarily an engineering task. But the architectural amenities of a well-designed station can add that extra something which can help make transit the mode of choice for rush-hour travel to and from the downtowns in the larger cities.

Civil Engineering—ASCE
October 1967

Architect's model of Washington, D.C. Station





A CANADIAN BOOM TOWN LOOKS TO RAPID TRANSIT

Calgary, Alberta, is growing at the rate of 1000 persons per month, and good transportation is becoming a critical factor.

If a city is a boom town, should it just grow, like Topsy, or should it plan its growth? A new transportation feasibility study for Calgary, Alberta, argues that growth should be made orderly—with the aid of rapid transit.

The city has a population of 336,000. Recent growth has been at the rate of 1000 more persons a month, and the city planning department estimates the half-million mark will be reached in 1976. The 1986 population is projected to be 775,000.

Consulting engineers Simpson & Curtin analyzed land use and transportation. They concluded that public transportation would have to play a much larger role than ever before, to combat the inevitable traffic jams. Their recommendation: A 20-mile rapid transit system, to be phased in over the next 18 years.

The cost of the proposed four-leg system is estimated at \$99.6 million, if the section in the central business district is elevated, otherwise, \$115.1 million, if that section is put underground.

Transit Influences City Growth

The whole question is—what kind of city does Calgary want to be? In the S&C report, it's remarked that "a reliance on surface transit will require considerable expenditure for highway development which will generate a 'spread city'

with low-density residential development and multiple employment and shopping centers.

"Development of rapid transit has consistently generated more compact and orderly development with a strong downtown and clustered residential development.

"The use of rapid transit as a land development tool has been amply demonstrated by the T-Bana in Stockholm where the rapid transit line to suburban communities is developed before the community. This creates an orderly cluster development pattern with the rapid transit station as the focal point of each sub-division. Sub-centers are laid out like 'pearls on a string'."

Rapid Transit—Cheap At The Price

Consultants argue, "The land development implications of high-speed transit—which have been the universal experience of all cities with rapid transit—far outweigh the revenue/cost ratio developed by the transit system itself.

"There has never been an 'unsuccessful' rapid transit system," said the consultants. "Toronto believes their system would be a financial success even if they collected no fares from passengers—land development and rising tax assessments are returning the investment."

Railway Age

GENERAL  ELECTRIC

Comments on 1971 and the Outlook

Your management's report at the 1971 Share Owners Information Meeting emphasized that to be successful today a business must strive to achieve dual objectives: economic and social. General Electric in 1971 made progress on both fronts.

The Company's economic performance was highlighted by record sales and earnings. The \$9,425.3 million sales volume in 1971 was 8% above the previous high reached last year. Our 1971 earnings total of \$471.8 million, or \$2.60 per share, surpassed our previous best earnings year, in 1967, by some 30% and rose well above the strike-depressed levels of 1970.

Share owners' approval of a two-for-one split of the common stock in April was accompanied by Board approval of a modest increase in dividends to an annual rate of \$1.40, compared with the preceding comparable rate of \$1.30.

While these forward steps are encouraging overall, your managers are keenly aware that the progress of our diversified businesses in 1971 was uneven. Operations that experienced substantial growth included power generation, rail transportation, medical systems, engineering plastics and commercial jet engines. Some other operations, however, suffered decreased sales and orders, necessitating actions that included sizable lay-offs of employees. Government-related areas such as military aircraft engines and space projects were especially hard hit.

We are continuing to develop an organization structure that strengthens our capabilities for forward planning. An early result was the identification of a number of product lines and plant facilities with marginal potential for contributing to the long-term profitable performance of the Company. Accruals were made in the 1971 fourth quarter for costs associated with closing out such product lines as integrated circuits and vacuum cleaners.

General Electric's commitment to social progress was expressed in part by the year's investments in new plant and equipment. Our capital expenditures in 1971 totaled \$553.1 million—the fifth consecutive year in which they have exceeded half-a-billion dollars—and much of this investment has gone toward building capacity to serve areas of social concern. Thus we continued expansion of capacity for equipment to produce environmentally clean electric power, including nuclear energy. Our plant investments also are enlarging our capabilities in transportation, health care, community services and environmental protection.

The Corporate Highlights section of this Report summarizes another important social dimension of General Electric's operations. This includes our internal efforts to improve the environmental performance of GE facilities and products. It extends to programs to implement our commitment as an equal-opportunity employer and to provide for the self-development of employees at all levels. Our research and development programs are seeking breakthroughs that will better meet consumers' needs and help alleviate the environmental problems facing industry.

General Electric enters 1972 with a year-end record \$9.3-billion backlog of orders—reflecting continued strong volume in new orders for heavy, longer-cycle equipment which offset weaknesses in shorter-cycle capital goods, component products and defense-related products and services. We see 1972 as a year in which General Electric operations will start fairly slowly in the first quarter—the result, in part, of the relatively low level of shipments of heavy equipment scheduled for this period. As the year progresses, however, we expect our business overall to improve and





Members of General Electric's Corporate Executive Office, photographed during a 1971 press conference: (left to right), Fred J. Borch, William H. Dennler, Jack S. Parker and Herman L. Weiss.



Elected Vice Chairmen and members of the Corporate Executive Office effective March 1, 1972: Walter D. Dance, left, and Reginald H. Jones.

make 1972 our best year to date.

Some flexibility in adjusting to increasing costs is provided by the authorization granted to the Company by the Government's Price Commission to increase prices 2% over base period levels on a weighted average basis across the Company's domestic operations.

As to overall business prospects, the U.S. economy is reflecting signs of improvement and should provide opportunities for a stronger year of business activity. However, your managers condition their agreement with the economists' generally favorable forecasts by their own awareness of problem areas—including the uncertain effect on the economy of continuing wage and price controls. We support the Government's objectives of controlling inflation and improving the U.S. position in world trade. Economic controls in peacetime, however, should be only temporary expedients. Over the longer term they will inevitably produce distortions and imbalances that will prove increasingly burdensome on the economy.

A much-needed effort encompassing Government-industry cooperation is to build on the measures initiated in 1971 to reduce the inequities that have placed U.S. industry at a disadvantage in international competition. The real job in achieving world trade that is both free and fair still lies ahead—namely, to remove international trade barriers so that U.S. businesses are placed on a truly equitable footing with overseas competitors. This is an absolutely essential step before the U.S. can make any substantial improvement in its trade and balance-of-payments position.

One General Electric response to the opportunities and challenges of 1972 is a new Company-wide program to rally all of our people behind the goal of making GE products and services the "Best Buy" for customers. Progress toward this goal will require and, we are confident, will receive extra effort by each component and every employee to improve our quality, service and value, while also seeking to make our operations more productive, cost-conscious and still more competitive. The results, we feel, will generate new momentum for the Company and the economy.

February 18, 1972

Fred J. Borch
Chairman of the Board

Review of 1971 Operations

General Electric operating results by major categories

(In millions)

Sales	1971	1970
Industrial Components and Systems	\$2,865	\$2,848
Consumer	2,383	1,969
Industrial Power Equipment	2,131	1,880
Aerospace	1,623	1,666
International	1,584	1,393
Corporate eliminations and unallocated items	(1,161)	(1,029)
Total Company	<u>\$9,425</u>	<u>\$8,727</u>

Net earnings

Industrial Components and Systems	\$141	\$ 97
Consumer	106	77
Industrial Power Equipment	114	87
Aerospace	37	26
International	86	66
General Electric Credit Corporation	31	20
Corporate eliminations and unallocated items	(43)	(45)
Total Company	<u>\$472</u>	<u>\$328</u>

Net earnings as a percentage of sales

Industrial Components and Systems	4.9%	3.4%
Consumer	4.4	3.9
Industrial Power Equipment	5.4	4.6
Aerospace	2.3	1.6
International	5.4	4.7
Total Company	5.0	3.8

Comparisons of results by category should take into account abnormal factors which in any year affect General Electric operating results unevenly. During 1970, for example, the strike which had a depressing effect on total Company results also had widely varying impacts on results by category.

Sales and net earnings for each major category include inter-category transactions. To the extent that sales and earnings are recognized in more than one category, appropriate elimination is made at the corporate level. Net earnings for each major category are after the allocation of corporate items such as expenses of headquarters personnel, corporate research and development, interest and other financial charges and income taxes. Representative products and services within each major category are shown on the following pages.

Condensed financial statements for General Electric Credit Corporation, a wholly-owned nonconsolidated affiliate, are on page 32. The Credit Corporation's expanding services range from financing appliances and mobile homes to industrial financing for ships, locomotives and commercial jets. The majority of products financed by GECC are manufactured by companies other than General Electric.

Industrial Components and Systems

GE products supplied to many industries and varied community services make this category the largest contributor to sales and earnings. Sales growth in 1971 by several of these businesses, such as rail transportation equipment and engineering plastics, nearly offset the volume lost with the transfer of GE's information systems equipment business to a Honeywell Inc. affiliate in October 1970. Generally sluggish markets affected other sectors.

The sharp increase in 1971 earnings resulted primarily from improvements over strike-affected 1970 results and, to a lesser extent, from termination of losses incurred by the transferred information systems equipment business.

The basic need of customers worldwide to increase productivity is served by the GE businesses in this category. The Company's broad range of automation equipment covers industry's needs from sensitive instrumentation to massive drive motors and industrial process control computers.

While these businesses reflected depressed economic conditions in 1971, they face a more encouraging outlook in 1972, spurred by increasing recognition that reduction of unit labor costs is a key to controlling inflation, to becoming more competitive in world trade and to covering costs of social objectives such as cleaning up the environment. This factor, plus reinstatement of the 7% investment tax credit, is expected to generate an upturn in capital spending for automation equipment.

Industry's environmental protection programs are bringing new business to GE. At the heart of a virtually pollution-free new hydroelectric pumped-storage power plant at Northfield Mountain, Mass.—the first U.S. underground installation—will be four huge GE generator motors producing a million kilowatts of electricity. Also, as pictured at right, the new San Jose-Santa Clara water pollution control plant at Alviso, Cal., relies on GE pump motors. Other GE motors are being used to drive the fans in water cooling towers to curb thermal pollution.

The first photograph on page 9 indicates a significant advance for General Electric in business terms as well as in technology. Planning a highly automated new foundry and wanting it to be the cleanest possible from an environmental standpoint, the customer not only chose electricity for melting power but also selected General Electric as the key supplier to provide the electrical equipment.

In anticipation of a turnaround in machine-tool orders, the Company sponsored a plan designed to assist U.S. tool makers implement a program whereby machine-tools with General Electric numerical controls will be shipped from inventory, eliminating the long delivery times which occur when these machines are not built until orders are received.

In transportation, major plant expansions and new orders characterized 1971. In its first full year as a supplier of complete transit and commuter cars, General Electric received orders for 414 units.

The plant expansion includes a new Transit Systems Building—giving GE the industry's most integrated manufacturing, assembly and test facilities—and the Transportation Technology Center, both in Erie, Pa. The Center will conduct development work on ways to improve transit systems' productivity through increased speeds and more automatic control, while advancing passenger comfort and safety.

GE's substantial business in locomotives was highlighted by an order for three all-electric units to power a new high-voltage, fully automatic railroad.

Sales and net earnings

(In millions)

	1971	1970
Sales	\$2,865	\$2,848
Net earnings	141	97

Representative products and services:

adjustable and constant-speed drives, ballasts, batteries, capacitors, communication systems, computer time-sharing, controls, electric motors, electronic tubes, equipment service, industrial heating, insulating materials, medical systems, plastics, process computers, silicones, transportation systems, wire and cable and wiring devices.

Electric motors powerful enough to turn back the tide—that's one task of these nine-foot-high GE vertical units that drive massive pumps at the San Jose-Santa Clara water pollution control plant.



General Electric broadened its role as a supplier of special materials that aid in improving product performance, lowering costs and raising productivity:

- Tough General Electric engineering plastics replace metal and glass in many applications. To its existing plastics line the Company added Valox, a new family of thermoplastic polyesters whose unusual resistance to high temperatures and solvents makes them suitable for applications in electrical equipment, appliances and other products. Also, mar-resistant Lexan sheet was introduced, filling the need for windows that are virtually unbreakable and vandal-proof.
- GE silicone chemicals that stand up under wide temperature ranges and other punishing conditions are contributing to product safety and reliability. Twenty new passenger-car applications significantly increased '71 sales to the auto industry.
- Additional international thrust for both General Electric plastics and silicones came with construction of a new Netherlands facility and joint ventures with Japanese firms, thus placing plants in a position to serve European and Far Eastern markets.
- The metallurgical products business, long a supplier of carbide cutting edges that increase metalworking productivity, broadened its offering of tooling systems.
- General Electric development of larger, tougher crystals of Man-Made industrial diamonds increases the cutting capability of diamond-edged saw blades. And GE Borazon® abrasive, which surpasses aluminum oxide in performance, is making grinding of hardened tool and die steels faster and more economical.

General Electric is a leading supplier in technologies vital to industry.

In communications, the Company's diversity of equipment includes mobile-radio, data communication and telecommunication systems. At the end of 1971, construction was under way on a new plant near Florence, S.C., to increase mobile-radio production capacity.

In computer time-sharing information services, General Electric increased its network by extending service via satellite into many countries of Europe as well as by expanding throughout the U.S.

Already a leading supplier of professional medical equipment in the U.S., GE took steps in 1971 to increase its penetration in world markets. Needed manufacturing capacity will be provided by a new facility near Milwaukee, Wis.

GE's diversified business in electrical components stems from the variety of motors, controls and other products supplied to many different makers of appliances, air conditioners, business machines and industrial equipment.

While closing out its integrated circuits business in 1971, General Electric continued to be a leading supplier of such electronic components as semiconductors, capacitors, rechargeable batteries, vacuum tubes and microwave devices.

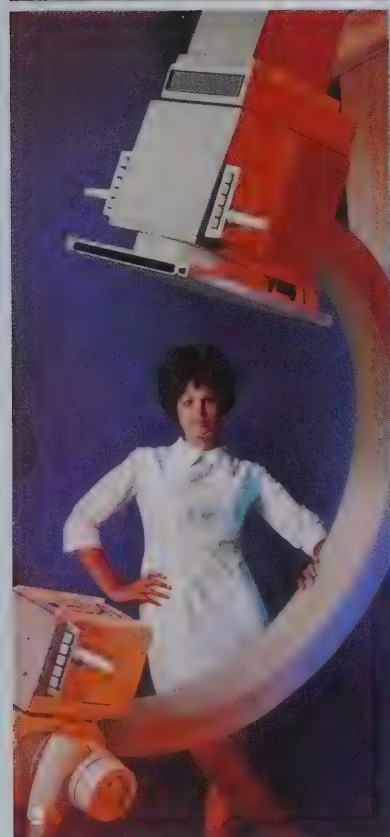
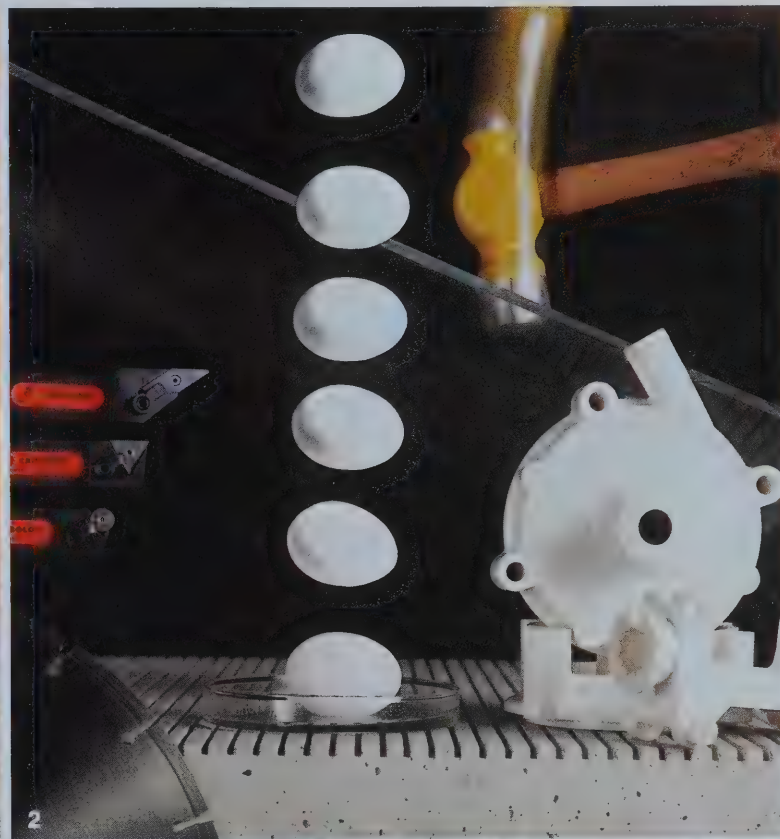
Two General Electric service businesses continued to grow in 1971.

Through its steadily growing network of GE service shops, the Company is providing industry an increasingly diverse range of maintenance and repair services for a broadening range of products—from motors to locomotives and power generation equipment. GE also offers on-site services such as complete plant overhauls.

General Learning Corporation, the education venture jointly owned with Time Inc., further strengthened its operations in 1971. For customers wishing to establish day-care centers for the children of working families, GLC is offering a new array of products and services tested in its own model learning center in Morristown, N.J.

The diversity of GE products and services for industry is documented by 1971 examples:

- 1 A non-polluting foundry?** Ford's new Casting Center in Flat Rock, Mich., comes closer than any has before, helped by its electric arc furnaces. The plant also represents new highs in foundry automation producing such automotive parts as engine blocks, heads and manifolds. Electrical equipment supplied by GE includes two process computers, power transformers, the power distribution system, arc furnace transformers and control, motors, controls, lighting, wire and cable and even the medical X-ray equipment for the plant's hospital.
- 2 Materials from General Electric provide special properties:** new Valox® engineering plastic that is both flame retardant and solvent resistant, Lexan® window glazing that is virtually unbreakable and newly mar-resistant, a silicone rubber so highly shock absorbing it can cushion the fall of an egg, new Carboloy® toolholder-insert combinations coated with titanium carbide which provide metalwork users with up to three times the tool life of earlier materials, and Man-Made® industrial diamonds that improve highway-grooving and stone cutting performance.
- 3 For the health care industry,** GE broadened its range of professional medical equipment with the introduction of its Traumex® Diagnostic X-Ray System for use in hospital emergency rooms. The ceiling-suspended system swings in an arc around the emergency stretcher, permitting the X-ray diagnosis without movement of an injured patient.
- 4 One new use of GE's computer time-sharing information network** is to keep Pontiac auto dealers informed of the production status of each customer's new car order via GE TermiNet® 300 teleprinters.
- 5 Community service equipment** includes a new, larger General Electric Vorcinerator® waste disposal system with the capacity to convert five to six tons of solid waste per hour into sterile ash while minimizing releases into the atmosphere.
- 6 Communication systems help coordinate community service.** For the Community Safety Agency in Simi Valley, Cal., GE engineers developed an ultra-high-frequency mobile-radio system to overcome congestion on regular transmitting channels.



Consumer

General Electric's consumer product sales strengthened in the last half of 1971 following a lackluster first half. This surge lifted the year's consumer sales and earnings significantly above the strike-depressed 1970 results. Although sales set records, earnings were affected by the costs associated with new facilities expansion programs and by the squeeze between rising costs and continued heavy competitive pressures on prices.

A potential benefit from current attractive values of GE consumer products is that, with further strengthening of consumer confidence in the U.S. economic outlook, rising sales volume will offer opportunities for earnings improvement. As one example of value comparisons, a General Electric refrigerator is currently on the market at the same price as a model offered in 1950, yet has more than double the storage space and includes such additional features as automatic defrosting, adjustable shelves, a coil-free back and a variety of color choices. Similarly, a General Electric range with a self-cleaning oven and other product advances retails today at the price of a 1950 clean-it-yourself model.

Values in these and other major appliances are expected to maintain General Electric's strong position in these markets.

Completion of Phase I of the ten-year construction plan for Appliance Park/East, in Columbia, Md., gives General Electric new production capacity for growth. By the end of 1971, the Park's new room air conditioner plant, range plant and warehouse were in operation.

Investments at the Company's original Appliance Park, in Louisville, Ky., also demonstrate GE's confidence in the future for consumer products. The Applied Research and Design Center, completed in 1971, provides a new home for the Major Appliance Laboratories, as well as operations handling new ventures planning and product design.

Other major plant expansions for consumer products included purchase of a plant for production of GE's Carry Cool® portable air conditioner at Columbia, Tenn., and a substantial increase in capacity at the central air conditioning plant in Tyler, Tex. To stay competitive in their respective markets, General Electric housewares, audio electronics, and television operations have added new production facilities in Singapore. And the Company's Lamp Division in 1971 established a new lamp filament research laboratory and a new glass and ceramics laboratory within its Nela Park research facilities, as well as announcing plans for four new production facilities to provide capacity for business growth.

New GE consumer products maintained a fast pace in competitive innovation:

- Compacts introduced for use in smaller living areas included a new clothes dryer, an automatic washer, a line of compact refrigerators, a countertop microwave oven and a portable room air conditioner.
- Addition of four-channel stereo components to the Company's fast-selling lines of two-channel stereo components, tape recorders and digital clock radios is helping General Electric's audio electronics operation maintain its position in the U.S. market.
- In television, General Electric's emphasis on product performance, reliability and serviceability paid off in 1971 in improved sales. Contributing factors included new Spectra-Brite® color picture tubes using more brilliant phosphors and One Touch® color system tuning.

Sales and net earnings

(In millions)

	1971	1970
Sales	\$2,383	\$1,969
Net earnings	106	77

Representative products and services:

air conditioners, appliance service, broadcasting, clothes washers and dryers, dishwashers, lamps, personal and portable appliances, radio and television receivers, ranges, refrigerators, stereo equipment and tape recorders.

Man-Mate® hoist, a device developed at General Electric's Research and Development Center, has gone to work to increase productivity at GE's Appliance Park/East. It's a man-amplification system, an electro-hydraulic genie that mimics the operator's arm motions and enables him effortlessly to handle bulky objects weighing up to a thousand pounds. Man-Mate hoist shown at right, one of three to be installed in the Park's range plant, is stationed at the end of the range production line to sort out the various colors and models and put them on the transfer conveyor to the mammoth warehouse.



american
RANGE
TWO OVER IS TO BEHOLD

• General Electric's housewares business introduced a number of new products, including a battery-operated digital alarm clock, a heated shave-cream dispenser, a mist-condition speedsetter, a styling comb for men, a new iron especially designed as an aid in sewing and a large-capacity Toast-R-Oven toaster that can bake a complete frozen dinner.

• Lamp innovations from General Electric included the 1000-watt Lucalox® lamp which delivers light more efficiently and at a lower cost of light than any other general lighting source available, Hi-Power flashcubes which provide more than twice the light of standard flashcubes, and "Plus 25" automobile headlamps which extend motorists' "seeing distance" by 25 feet. Development work also brought an important advance in the Company's oldest product, the incandescent light bulb. A "Soft-White Plus" premium line of household bulbs has been announced which features a new, stronger filament called "Power-Coil." These bulbs offer consumers a new option in terms of life versus light output. They also offer greater shock resistance and a finish that diffuses light to soften shadows.

Quality-assurance programs and product service were emphasized in 1971 to help assure customer satisfaction with General Electric products.

For major appliances, new factory electronic test methods check out products more swiftly and thoroughly than is possible by human senses. One example, an application of which has been extended to provide substantial product service diagnosis benefits as well, is GE's Product Quality Analyzer System. Used to test refrigerators in the factory, the system provides an instantaneous check of circuitry. Its product service counterpart, called Rapid Electrical Diagnosis System, is expected to reduce the time for product service diagnosis of the electrical systems of these refrigerators by approximately 25%. The system is also expected to cut related call-backs by roughly 50%.

Another example is the Green Dot Quality Assurance Program which provides automatic factory testing of critical components of home-laundry appliances and identifies good quality components by spraying on a green dot.

Evidence of the Company's commitment to continue providing the best in after-sale service is the expansion of GE's Customer Care Service Network. Scheduled to be completely in place this spring, the program, called "Customer Care—Everywhere," insures more efficient service through better coordination of GE's own 94 factory service branches as well as franchised service dealers and independent service agencies. One particular benefit is that the network assures continuity of service for the customer who moves to a new location.

General Electric expanded other areas of service to consumers in 1971:

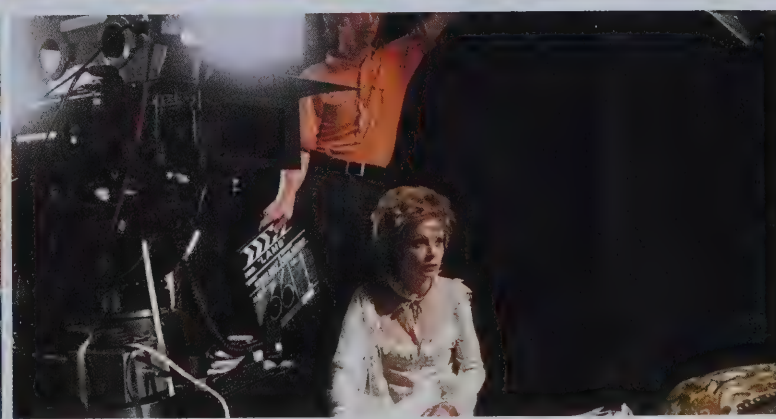
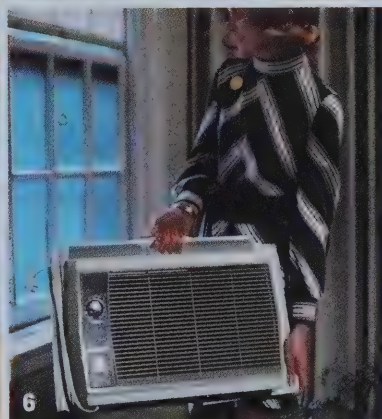
- General Electric Broadcasting Company again set records in sales and earnings.
- General Electric Cablevision Corporation began construction of new systems in Decatur, Ill., and Anderson, Ind. The Corporation is planning construction in other currently held franchises and is seeking new locations.
- Tomorrow Entertainment, Inc., GE's year-old entertainment affiliate, produced its first TV special, "The Eagle and the Hawk," for the GE Monogram series and was active in a wide range of film and television projects by year-end. During 1971 TEI acquired Hurok Concerts, with its prestigious roster of performers, and also acquired several small companies engaged in motion picture and television production.

New GE consumer products introduced in 1971
serve the family throughout the day:

- 1 Cordless digital alarm clock also shows the day.
- 2 Beauty aids—mist/condition speedsetter sets your hair in minutes...with mist, with conditioner or dry. Also shown, make-up mirror with four light settings.
- 3 King-size Toast-R-Oven® toaster toasts four slices of most size breads or bakes a complete frozen dinner.
- 4 Portable automatic washer and clothes dryer are engineered for small areas and for use without installation.
- 5 Sew and press iron—the first spray, steam and dry iron especially designed as an aid for sewing.
- 6 Revolutionary new Carry Cool® portable room air conditioner weighs in at 43 pounds, is rated at 4,000 BTU and retails for under \$100.
- 7 Countertop microwave oven is four times faster than conventional cooking equipment.
- 8 Four-channel eight-track stereo tape player gives the dimension of a live performance.
- 9 Hotpoint trash compactor squashes trash to one-fourth its original volume and accumulates it in a neat bag.
- 10 "Soft-White Plus" is GE's household bulb featuring a stronger "Power-Coil" filament to give customers a new option in terms of life versus light output.

General Electric's Command Performance® Network extended its closed-circuit large-screen TV service during 1971 to 35 cities for use by business, industrial and professional groups.

Tomorrow Entertainment, Inc., GE's entertainment affiliate, began producing its first motion picture in 1971—*Lady Caroline Lamb*, based on the romance of Lord Byron and Lady Caroline Lamb, as portrayed here by actress Sarah Miles.



Industrial Power Equipment

Record orders for power generation equipment and marine propulsion systems exceeded 1971's greatly increased volume of shipments and brought backlogs in this category to over \$6.2 billion. Sales and earnings for this category also reached new highs despite decreased earnings by some power delivery businesses.

These 1971 results confirm the fact that electricity is continuing to gain recognition worldwide as the clean energy source—the one that best meets soaring power needs with least harm to the environment. General Electric is emphasizing its research and development concentrated on minimizing the environmental impact of power equipment, as evidenced by reduced emissions from gas turbines, new products to improve the appearance of distribution systems and use of barge mountings to overcome plant siting problems for gas turbines and, potentially, nuclear plants.

Large steam turbine-generator orders rose substantially above 1970 levels, exceeding 20 million kilowatts and increasing the backlogs for this equipment.

With new large steam turbine-generator production capacity coming increasingly on line, 1971 shipments were at a record high. The extent of General Electric's capabilities to help meet energy demands is indicated by the fact that 1971 large steam turbine-generator shipments brought the 1961-1971 total to over 100 million kilowatts, as much as was shipped in the preceding sixty years.

Plant expansion is providing the Company a high-pressure turbine plant in Schenectady, N. Y., and a low-pressure turbine facility in Charleston, S. C. A new generator plant in Merrimack, N. H., is scheduled for initial production in 1972. Completion of a new Aerodynamic Laboratory in Schenectady represents continued expansion of facilities to maintain leadership in product reliability and efficiency.

During 1971, four operating subsidiaries of American Electric Power Company, Inc. filed a suit which challenges General Electric's price policy for the sale of turbine-generators and alleges the existence of a combination in violation of the anti-trust laws. General Electric believes that the suit is unwarranted and that the pricing policy used in the sale of turbine-generators, which was publicly announced in 1963, is legally sound.

General Electric's lead in nuclear-plant operating experience was extended with the startup of four new plants in 1971—two in the U.S. and two offshore. Two GE plants are the largest operating reactors in the world, at 809 megawatts each. The almost 7 million kilowatts of electricity being produced by 20 operating GE boiling water reactor plants at year-end represented close to 60% of the total U.S. produced light-water reactor installed capacity in the world.

Eight of the eleven "turnkey" projects—the unprofitable complete-plant commitments made in the mid-1960's—have been completed. It is expected that the remaining three, for which construction is essentially completed, will be turned over to customers within the next year.

During 1971, Jersey Central Power and Light Company filed suit against General Electric in connection with the Oyster Creek nuclear generating station, one of the turnkey projects. Jersey Central claims \$62.8 million in damages allegedly attributable to delayed completion of the plant which is now in regular commercial operation. The Company believes that the delays were legally excusable and that the damages claimed are of a type not recoverable under the contract. In several other nuclear projects there are substantial unresolved customer claims. The principal

Sales and net earnings

(In millions)

	1971	1970
Sales	\$2,131	\$1,880
Net earnings	114	87

Representative products and services:

gas turbines, installation and service engineering, insulators, marine turbines and gears, mechanical drive turbines, meters, nuclear power reactors and fuel, power circuit breakers, steam turbine-generators, switchgear, transformers and other power apparatus for industry.

General Electric gas turbines, with short production cycles and low levels of pollution emissions, have experienced a business boom that has outgrown the two-year-old facilities at Greenville, S.C., shown at right, and have required an expansion virtually doubling the plant's production capacity.



issue is who should bear the economic risk of meeting newly imposed environmental protection requirements under the terms of the applicable contracts. It is General Electric's position that such risks should be borne by the user rather than by the supplier of the equipment.

In connection with the sale of nuclear reactors, GE has received, through 1971, nuclear fuel orders totaling \$1.3 billion for delivery through 1983, only a small portion of which has yet been manufactured and shipped. This fuel has been sold with warranties related to fuel life span. Until statistically significant fuel life data become available, which will not be the case for several years, it will not be clear how the fuel will perform in comparison with warranties.

General Electric continues to believe that nuclear electric power will be essential to meet the nation's growing energy requirements, but political and legal opposition on environmental grounds may affect the rate of growth of the reactor and fuel business in the near term. Orders totaling \$604 million to build nine nuclear plants—six domestic and three offshore—were received in 1971, raising the total number of GE-equipped plants completed or on order to 63.

Gas turbine sales sustained their record pace as utilities recognized their advantages in quick installation and minimum ecological impact.

An outgrowth of gas turbine technology is the Stag® (combined steam and gas turbine) power plant. GE received its first Stag-300 order in 1971 for a 340 megawatt plant which will have efficiencies approaching those of the most efficient fossil-fired steam plants while also offering low ecological impact and a short delivery cycle.

General Electric continued to be a main supplier of ship propulsion equipment. During 1971 the Company delivered over 1½ million shaft horsepower of steam propulsion equipment, including power for nuclear frigates, the aircraft carrier Dwight D. Eisenhower and eight new container ships.

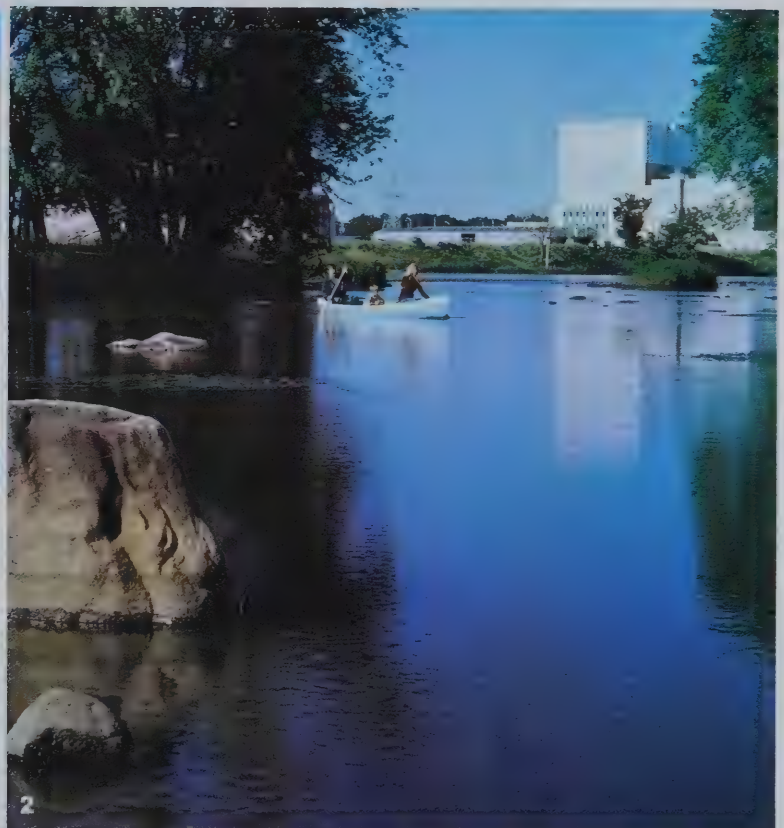
Depressed sales and earnings in certain power delivery businesses are being met by intensive GE programs to lower costs and by numerous technical advances and product innovations. On the technological front, GE supplied solid-state relays to control a new 765 kilovolt transmission line in the U.S. and, in a joint project with Canadian General Electric, solid-state valves for Canada's pioneering Eel River high-voltage direct-current control and conversion systems.

Products to improve the appearance and reliability of power systems are being made at a new GE plant in Shreveport, La., which will specialize in producing transformers for underground or surface installations, complementing production at Pittsfield, Mass., and Hickory, N.C. Also at Hickory is GE's demonstration center where utility engineers can determine the optimum products for their underground distribution systems. Another development to help improve the esthetics of power delivery systems came with the introduction of GE's compact, tamper-resistant StyleMaster® substation which eliminates the need for protective fences.

A General Electric asset in helping customers bring more electric power on line is the 2700-man installation and service engineering team providing worldwide service in installing and maintaining electrical, electronic, mechanical and nuclear equipment and supplying customers with technical support.

Four markets served by General Electric's industrial power equipment operations:

- 1 Steam turbine-generators**—GE production of these big power makers is being augmented by new facilities, as illustrated by welders at work on a turbine hood at the Charleston, S.C., plant.
- 2 Nuclear power generation**—exemplified by the Monticello, Minn., plant, equipped to supply 545 megawatts of electrical energy from its General Electric boiling water reactor system.
- 3 Power distribution**—with most new large commercial installations now being served by underground distribution, General Electric's new plant in Shreveport, La., is specializing in transformers for underground systems.
- 4 Power utilization**—represented by a new lighting system whose brightness improves both spectator viewing and color telecasts at San Francisco's Candlestick Park. More than 1,000 GE Multi-Vapor® lamps and Powr/Spot® luminaires were precisely aimed with the help of GE computer programs to provide maximum quality in color TV broadcasting.



Aerospace

The successful introduction of the GE-powered DC-10 Trijet in airline service and a widening range of applications of space technology to earth-oriented problems were bright spots for General Electric's aerospace businesses in a year of depressed conditions and substantial reductions in work force.

The sales decline reflected lower levels of Government spending on defense and space projects. For GE the decline was partially offset by increased billings for commercial jet engines. The higher earnings in this category resulted largely from improved margins as certain military engine programs neared completion. The refund of GE's share of costs incurred in developing the engines for the U.S. supersonic transport prototype was used to offset costs in adjusting the programs of the Aircraft Engine Group for this cancellation. Development costs for commercial engines continued at a high level. Entry into the commercial market also involves long-term financing commitments to the airlines.

Three 1971 developments strengthened GE's role in commercial aviation:

- Exceptional performance of the first 13 McDonnell Douglas DC-10 Trijets and their GE CF6 engines in regular airline service at year-end;
- Receipt of the first order for GE engines for the European A-300B twin-jet airbus;
- Selection of General Electric as the partner of SNECMA, the French engine manufacturer, in forming a company to share development and production of a "ten ton" thrust engine for applications in conventional and STOL (short takeoff and landing) civil transports.

In military engines GE continued meeting important new commitments. The TF34 engine was installed in the first of a new series of Navy anti-submarine warfare aircraft. The development program for the GE F101 powerplant to power the USAF B-1 bomber continued on schedule. In helicopters the T700 has been chosen for the Army's planned Utility Tactical Transport Aircraft System.

The LM2500 marine and industrial engine continued to accumulate test hours as the powerplant for the Navy's new Spruance class destroyer and at year-end was also serving in gas pipeline installations in the U.S.

New commercial dimensions for GE aerospace operations were developed in 1971:

- Applying aerospace technology to factory-produced housing modules, GE won a foothold in military-base housing and U.S. Government experimental projects.
- In environmental protection, General Electric space technology was applied toward solutions to problems in waste management, air and water pollution and noise abatement. A compact GE waste treatment system is in shipboard operation, and GE-developed pollution monitoring and control systems are in widespread use.
- In oceanography, GE reached a 10-year agreement with MITSUBISHI of Japan for mutual development of ocean technology, products and environmental controls.

For the U.S. space program General Electric is a major contributor to the Apollo lunar program and to such other projects as the Nimbus weather satellite and the Earth Resources Technology Satellite which will guide men's efforts to conserve and better utilize earth's limited resources.

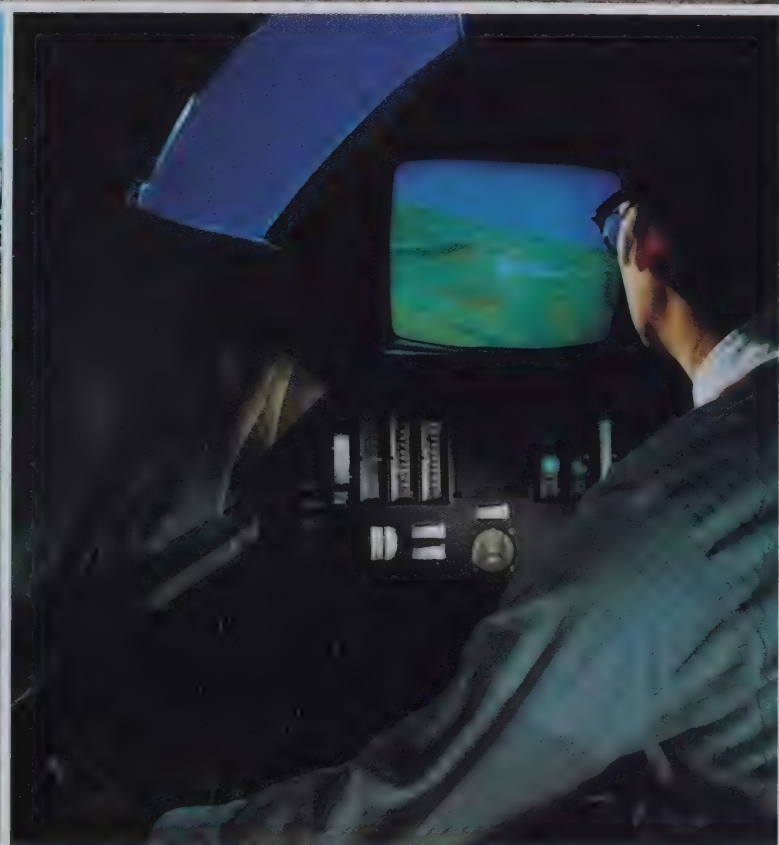
GE serves essential national security needs with its technological resources. The Company supplies complex defense systems, including sonar, aircraft flight controls, guidance and fire control for ballistic missiles, the acquisition radar for the Safeguard anti-ballistic missile system and re-entry systems for the Minuteman III ICBM.

Sales and net earnings	(In millions)	
	1971	1970
Sales	\$1,623	\$1,666
Net earnings	37	26

Representative products and services:
aerospace instruments, aircraft jet engines, armament systems, flight controls, missile re-entry systems, product service, radar and space flight systems.

General Electric's growth in commercial aviation was highlighted in 1971 with the entry of GE-powered McDonnell Douglas DC-10 Trijets into commercial airline service. Power supplied by GE's CF6 engines enables the DC-10 to serve intermediate as well as larger airports such as Los Angeles' International, pictured at right.

Better homes for GIs' families result from GE experts' application of aerospace materials and engineering systems ideas to factory-produced housing modules. Right: some of the 450 homes which GE, working with construction companies, is supplying for two California Air Force bases. Far right: computer display techniques, used to picture changing lunar landscapes in training astronauts, have also been developed for simulated landings by airplane pilots.



International

Record results were achieved by General Electric's international businesses in 1971. New highs were reached in both sales and earnings, reflecting balanced performance in the key aspects of the Company's multiple approach to world markets included in this category: exports from the United States, overseas manufacturing affiliates, joint ventures and investments.

Exports from U.S. operations were the highest in General Electric's history. New orders for exports received during 1971 also set records and contributed substantially to the Company's orders backlog. At the heart of this growth is General Electric technological leadership, reflected in orders for products ranging from power generation equipment and machine tool controls to components such as industrial diamonds. This 1971 export performance takes on added significance in the light of the critical U.S. need to gain a more favorable balance of trade.

General Electric's overseas operations increased sales over 1970:

- In Latin America, economic growth is increasing the demand for electrical equipment such as hydraulic turbine-driven generators and integral motors manufactured locally by General Electric affiliates. A 1971 highlight was a \$34-million order for locomotives to be filled jointly from Brazilian and U.S. facilities—business not available to the Company on a pure U.S.-export basis.
- In Europe, the Company won substantial export orders. Of particular significance was a sharp rise in "mixed export" sales, in which certain portions of a product are supplied from the U.S. to overseas manufacturers who provide other major parts and final assembly.
- Affiliates in Spain and Italy continued to provide local bases for serving Europe and were successful with a variety of products in building exports to other international markets.
- The Australian affiliate strengthened its organization and achieved a turnaround in appliance and housewares businesses.
- In India, the GE affiliate is producing X-ray equipment and operating tables to supply both local needs and export markets.

Canadian General Electric Company's reported sales and earnings increased from those for the preceding year, despite the continued recession of the Canadian economy. Contributing to the improved earnings performance were increased income in the apparatus and heavy machinery business, higher volume in consumer product sales and the elimination of losses from electronic component manufacture which was discontinued in 1970. Strong cost control measures introduced by the company when the Canadian recession began in 1970 and a reduced level of borrowings and interest costs also helped sustain earnings. The Canadian company's outlook was strengthened by an upturn in Canada's economy late in 1971.

Employing some 17,000 people in ten different provinces, Canadian General Electric is at work on highly sophisticated products for Canada's progress, such as the heavy water plant to serve the nation's nuclear power program. Other leading 1971 examples of the Canadian company's technological competence:

- For a new Canadian steel plate mill complex, CGE supplied the automation system, including the process computer that guides production.
- CGE built the valves for the world's first major solid-state high-voltage direct-current control and conversion system at Dalhousie, New Brunswick.

Sales and net earnings

(In millions)

	1971	1970
Sales	\$1,584	\$1,393
Net earnings	86	66

This category includes exports from the U.S. to customers and operations of diversified affiliates in such countries as Australia, Brazil, Canada, Italy, Mexico, Spain and Venezuela. Operations of nondiversified foreign affiliates are included under their appropriate category.

Major facets of General Electric business in international markets in 1971:

- 1 General Electric's multiple approach to international markets is exemplified in Tokyo Electric Power's Fukushima plant. Its equipment includes large exports from GE's U.S. facilities. Fukushima III, now under construction, is being equipped by a General Electric licensee in Japan. And fuel for these nuclear plants will be supplied by Japan Nuclear Fuel Co., Ltd., jointly owned by General Electric and two Japanese firms.
- 2 The General Electric world system includes 80 manufacturing facilities in 23 countries. Pictured: production of refrigerators by Australian affiliate.
- 3 Overseas affiliates are developing their export capabilities, such as this large transformer built in Brazil for delivery to Mexico.
- 4 Cogenel, the Company's Italian affiliate, is Europe's leading supplier of numerical controls for advanced machine tools.
- 5 Advanced technologies supplied in Canada by Canadian General Electric will permit transmission this summer of 320 megawatts of pollution-free hydroelectric power from far north to eastern Canada and northeastern United States. Pioneering Eel River station in New Brunswick, world's largest solid-state high-voltage direct-current control and conversion system, will use eight of these 19-foot-high valves.



1971 Corporate Highlights

Substantial progress was made by General Electric during 1971 in a number of areas of social concern where management has established policies and standards for performance by GE operations.

General Electric provides for environmental protection in three principal ways.

- Limiting adverse environmental effects from General Electric facilities: In 1971 the Company expanded its activities in improving environmental controls at both old and new plants. Projects included installation of new waste-water treatment systems, conversion of facilities to improve compatibility with air quality objectives, and recycling of solid wastes so as to regain usable materials. GE operations completed all submissions necessary in applying for permits relating to discharges into rivers and streams. At the corporate level an Environmental Protection Operation was at work, staffed with experts in all major pollution problem areas. The Operation assists General Electric plants to improve environmental controls and conducts yearly appraisals to measure operations on their conformance with the Company's environmental policies.
- Reducing adverse effects from GE products: Major areas of progress in 1971 included programs to reduce noise in products as varied as consumer appliances and jet engines and to improve esthetics through new underground or low-silhouette electrical distribution products. Performance in this area is monitored by a corporate level Product Quality staff.
- Developing products and processes which help solve environmental problems: In addition to the examples described in this Report's Review of Operations, General Electric environmental developments include a pump storage grinder to correct septic tank problems, an oil/water separator system to remove oil from waste water and a proposal for New York State envisioning "environmental facilities parks" especially equipped to convert, recycle or dispose of solid wastes on a regional basis.

New environmental product development was a GE research emphasis in 1971.

Development of additional environmental products is a major goal for the Company's research and development programs. Projects under way at the Company's Research and Development Center include studies aiming at improved combustion of fuels, ozone sterilization, new water purification membranes, advanced battery systems for electric vehicles and development of a strain of high-temperature "thermophilic" micro-organisms to convert waste cellulose into proteins for recycling into cattle food.

Overall, to maintain the technological thrust necessary to keep its businesses competitive, General Electric held expenditures on research and development at a high level in 1971 despite reduced work on governmental defense and space development projects.

Research for the Company as a whole is conducted at the Research and Development Center in Schenectady, N.Y. In addition, the Company has more than 100 laboratory activities associated with product operations.

General Electric programs for minorities and women gained in 1971 to assure equal employment opportunities for both groups. During the year the number of minority and women employees in the Company continued to increase, and the Company moved closer to the goal of having equitable minority representation in



Projects at General Electric's Research and Development Center in 1971 included (top) development of experimental gas turbine engines for increased efficiency and improved environmental compatibility. To supplement the work of this Company-wide laboratory, GE invested in new laboratory facilities associated with product operations, including (above) Atlas, a new heat transfer loop to help in further improving the thermal performance of the core in General Electric's boiling water reactor system for nuclear power plants. Another new facility, the Applied Research and Design Center at Appliance Park in Louisville, Ky., includes (right) an anechoic chamber used in developing quieter appliances.



its plants and offices. The Corporate Executive Office assessed overall progress and the effectiveness of programs in this area of vital concern during 1971.

Training and orientation programs tackled two tasks: to increase and enhance minority participation in employment; and to improve management understanding and awareness of the need for effectively utilizing the emerging work force.

The Company is an active participant in the Government's "Jobs for Veterans" program. In hiring for specialized skills training programs, GE managers are giving priority to Vietnam veterans while continuing to improve job and career opportunities for minority job applicants. GE appliance operations conduct a special program to train veterans for careers as service technicians.

General Electric's pay and benefits for employees were improved. Second-year pay increases under the provision of most Company-union contracts resulted in a general rate increase of 15 cents an hour on March 1 and a cost-of-living adjustment of 8 cents an hour on October 25.

A host of new employee benefits went into effect in January 1971. These included reduced employee contributions to the Insurance Plan and improvements in income extension aid, the Vacation Plan and the Pension Plan. The GE Suggestion Plan, one of the oldest in industry, marked its 65th anniversary in 1971.

Company-conducted educational programs are a GE tradition and are essential to assuring the competence of the current and future work force. In 1971 the range of GE courses extended from entry-level training to courses in advanced management. Over 5,000 employees completed professional and managerial courses. Also, the Company conducted a number of Government-funded training programs for the U.S. Labor Department, including one in Chicago by which some 400 disadvantaged workers have been trained and employed in GE operations.

In its first year the Company's Individual Development Program had some 1,500 participants. The program encourages employees' self-development by providing tuition refunds for all types of occupational and vocational training from basic literacy to college-level courses. Employees on lay-off may use the program to prepare themselves for new jobs inside or outside the Company.

Contributions to U.S. education in 1971 exceeded \$2.4 million in grants by the General Electric Foundation, a trust established in 1952.

Under a new Educational Incentive Awards program, grants totaling \$326,000 were made by the Foundation to seven universities proposing imaginative changes in curriculum, community involvement and other programs relating to such contemporary problems as minority education and environmental studies.

In addition, General Electric authorized educational contributions of \$817,000.

Annual Reports of the Foundation and GE Aid to Education program are available on request.

A new all-electric headquarters facility will be built by General Electric in Fairfield, Conn. The facility will house the Company's senior management and supporting staffs. The present GE headquarters facility in mid-Manhattan will continue to be fully occupied by the Company to serve as the headquarters for the International Group and to consolidate other components now using quarters at various New York City locations. The Fairfield facility is scheduled for completion in 1974.

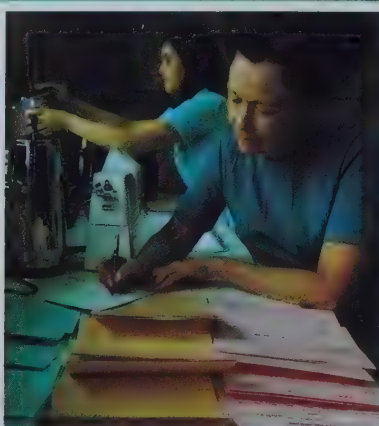
1 Two General Electric people who set their sights on new careers with the aid of GE's Individual Development Program are Erie employees Elizabeth Wheeler, whose studies enabled her to move from factory work to an office job, and Paul Samlock, former motor assembler who became a foreman after taking IDP-funded courses in inspection and industrial processes.

2 To develop managers' understanding of Company programs to provide equal opportunities for women and minorities, Cathy Conover and Nathaniel Crook led discussions of the Company's Equal Opportunity/Minority Relations program with participants in General Electric's Manager Development Course at Crotonville, N. Y.

3 Among the challenging jobs taken on by GE women: Debbie Brennan (near right), graduate of the GE Employee Relations Management Program, is at work in personnel services for General Electric Credit Corporation; Virginia Gagnon, head of housewares consumers research, checks critiques of a proposed new product received from the 2000-family consumer panel she organized; Teresa Kelly, mathematician, is a specialist in manufacturing systems at Appliance Park/East; and Marjorie Drucker is the Components and Materials Group's specialist in environmental control and industrial hygiene.

4 More jobs for veterans is a General Electric employment goal. Vietnam veteran Lionel Gentle became an employee in the Company's operations in Chicago after visit to Hotpoint booth at veterans' Job Fair.

5 General Electric's educational capabilities were put to work in training programs conducted by GE people. At Cleveland's Woodland Job Center, in a building donated by GE in 1968, more than 18,000 disadvantaged young people have received remedial education, job placement and job training. George Poole, previously a GE foreman, is now manager of GE's job-training shop, one of many training programs within the Center.



1971 Financial Summary

Because of the great diversity in work done by the thousands of companies in American industry, there is also diversity in the accounting policies they employ. For ease in interpreting financial results it is helpful to identify the policies applied.

As an aid to readers of this Report in the evaluation of the data in this Financial Summary, accounting principles followed by General Electric are printed in blue. Adherence to these accounting principles has, in management's opinion, resulted in reliable and consistent financial reporting by the Company.

Consolidated financial statements and accompanying schedules in this report include a consolidation of the accounts of the Parent—General Electric Company—and those of all majority-owned affiliates (except finance affiliates whose operations are not similar to those of the consolidated group). All significant items relating to transactions between the Parent and affiliated companies are eliminated from consolidated statements.

Except for fixed assets and accumulated depreciation, assets and liabilities of foreign affiliates are translated into U.S. dollars at year-end exchange rates, and income and expense items are translated at average rates prevailing during the year. Fixed assets and accumulated depreciation are translated at rates in effect at dates of acquisition of the assets.

Net earnings include the net income of finance affiliates and the consolidated group's share of earnings of associated companies which are not consolidated but in which the group owns approximately 50% of the voting stock.

During 1971, net earnings amounted to \$471.8 million compared with prior year earnings of \$328.5 million. An extended strike beginning in October 1969 and ending in February 1970 had a severe impact on 1970 results of U.S. operations.

Earnings per common share were \$2.60 in 1971 compared with \$1.81 in 1970 as

adjusted to reflect the two-for-one stock split in April 1971. Fully diluted earnings per common share, which would result from the potential exercise or conversion of such items as stock options and convertible debt outstanding, were \$2.57 in 1971 and \$1.80 in 1970.

The quarterly dividend rate was increased from an effective 32½ cents a share to 35 cents a share beginning with the dividend declared for the second quarter of 1971. Thus, the new annual rate is \$1.40 a share compared with the previously effective annual rate of \$1.30 a share.

Sales of products and services to customers are reported in operating results only as title to products passes to the customer and as services are performed as contracted.

Sales in 1971 totaled \$9,425.3 million, an increase of 8% over the 1970 record level. Sales and net earnings attributable to each of the Company's major categories are summarized on page 5.

Other income amounted to \$152.0 million in 1971, an increase of \$45.2 million over 1970. Significant items included in other income are shown in the left margin.

Net earnings of General Electric Credit Corporation amounted to \$30.9 million in 1971, an increase of 56% over 1970. Financial statements for the Credit Corporation are on page 32.

During June 1971, the Company sold 375,000 shares of Honeywell Inc. common stock resulting in a gain of \$11.0 million (\$7.7 million after taxes).

Costs are classified in the statement of current earnings according to the principal types of costs incurred. Operating costs, excluding interest and income taxes, classified as they will be reported to the Securities and Exchange Commission were: cost of goods sold of \$6,962.1 million in 1971 and \$6,423.6 million in 1970; and selling, general and administrative expenses of \$1,726.2 million in 1971 and \$1,754.2 million in 1970.

Other income	(In millions)	
	1971	1970
Net earnings of the Credit Corporation	\$ 30.9	\$ 19.9
Income from:		
Customer financing	29.8	25.8
Royalty and technical agreements	31.9	24.4
Marketable securities and bank deposits	10.4	12.8
Other investments	24.9	14.8
Sale of Honeywell stock	11.0	—
Other sundry income	13.1	9.1
	<u>\$152.0</u>	<u>\$106.8</u>

(continued on page 30)

Statement of Current and Retained Earnings

General Electric Company and consolidated affiliates

(In millions)

	For the year	1971	1970
Sales of products and services to customers		\$9,425.3	\$8,726.7
Other income		152.0	106.8
		<u>9,577.3</u>	<u>8,833.5</u>
Costs			
Employee compensation, including benefits		3,885.3	3,776.4
Materials, supplies, services and other costs		4,484.0	4,073.9
Depreciation		273.6	334.7
Taxes, except those on income		101.8	88.8
Interest and other financial charges		96.9	101.4
Provision for income taxes		317.1	220.6
Deduct increase in inventories during the year		(56.4)	(96.0)
		<u>9,102.3</u>	<u>8,499.8</u>
Earnings before interest of other share owners		475.0	333.7
Deduct interest of other share owners in net results of affiliates		<u>(3.2)</u>	<u>(5.2)</u>
Net earnings applicable to common stock		471.8	328.5
Deduct dividends declared		<u>(249.7)</u>	<u>(235.4)</u>
Amount added to retained earnings		222.1	93.1
Retained earnings at January 1		<u>1,874.1</u>	<u>1,781.0</u>
Retained earnings at December 31		<u><u>\$2,096.2</u></u>	<u><u>\$1,874.1</u></u>
Earnings per common share (In dollars)		\$2.60	\$1.81
Dividends declared per common share (In dollars)		\$1.38	\$1.30

Per-share amounts have been adjusted for the two-for-one stock split in April 1971.

The 1971 Financial Summary beginning on page 26 and ending on page 35 is an integral part of this statement.

Statement of Financial Position

General Electric Company and consolidated affiliates

(In millions)

	December 31	1971	1970
Assets			
Cash		\$ 250.1	\$ 190.8
Marketable securities		35.9	15.0
Current receivables		1,741.3	1,573.7
Inventories		1,611.7	1,555.3
Current assets		<u>3,639.0</u>	<u>3,334.8</u>
Investments		714.3	630.9
Plant and equipment		2,025.7	1,749.4
Other assets		508.8	483.4
Total assets		<u>\$6,887.8</u>	<u>\$6,198.5</u>
Liabilities and equity			
Short-term borrowings		\$ 569.8	\$ 658.1
Accounts payable		454.6	431.3
Progress collections and price adjustments accrued		656.5	599.3
Dividends payable		63.6	58.8
Taxes accrued		331.5	239.6
Other costs and expenses accrued		764.4	663.2
Current liabilities		<u>2,840.4</u>	<u>2,650.3</u>
Long-term borrowings		787.3	573.5
Other liabilities		255.1	249.3
Miscellaneous reserves		160.8	130.5
Total liabilities		<u>4,043.6</u>	<u>3,603.6</u>
Interest of other share owners in equity of affiliates		<u>42.4</u>	<u>41.3</u>
Preferred stock		—	—
Common stock		462.3	460.9
Amounts received for stock in excess of par value		368.8	330.0
Retained earnings		<u>2,096.2</u>	<u>1,874.1</u>
		2,927.3	2,665.0
Deduct common stock held in treasury		(125.5)	(111.4)
Total share owners' equity		<u>2,801.8</u>	<u>2,553.6</u>
Total liabilities and equity		<u>\$6,887.8</u>	<u>\$6,198.5</u>

The 1971 Financial Summary beginning on page 26 and ending on page 35 is an integral part of this statement.

Statement of Changes in Financial Position

General Electric Company and consolidated affiliates

(In millions)

	For the year	1971	1970
Source of funds:			
From operations:			
Net earnings	\$	471.8	\$328.5
Depreciation		273.6	334.7
U.S. Federal income tax timing differences		19.9	(9.2)
Earnings of the Credit Corporation less dividends paid		(6.9)	(4.9)
		<u>758.4</u>	<u>649.1</u>
Major domestic long-term borrowings		200.0	—
Overseas Capital Corporation long-term borrowings		28.0	16.6
Increase in other long-term borrowings—net		14.0	—
Newly-issued common stock		30.4	37.1
Total source of funds		<u>1,030.8</u>	<u>702.8</u>
Application of funds:			
Plant and equipment additions		553.1	581.4
Dividends declared		249.7	235.4
Reduction in major domestic long-term borrowings		23.7	10.1
Reduction in Overseas Capital Corporation long-term borrowings		4.5	4.5
Reduction in other long-term borrowings—net		—	101.9
Other—net		85.7	6.1
Total application of funds		<u>916.7</u>	<u>939.4</u>
Net increase (decrease) in working capital	\$	<u>114.1</u>	<u>\$(236.6)</u>
Analysis of changes in working capital			
Cash and marketable securities	\$	80.2	\$(123.5)
Current receivables		167.6	205.9
Inventories		56.4	(35.4)
Short-term borrowings		88.3	(317.3)
Other payables		(278.4)	33.7
Net increase (decrease) in working capital	\$	<u>114.1</u>	<u>\$(236.6)</u>

The 1971 Financial Summary beginning on page 26 and ending on page 35 is an integral part of this statement.

General Electric Pension Trust		<i>(In millions)</i>	
Operating statement		1971	1970
Total assets at Jan. 1		\$1,891.9	\$1,750.5
Company contributions		91.0	66.6
Employee contributions		27.8	24.2
		118.8	90.8
Dividends, interest and sundry income		98.0	88.0
Common stock appreciation:			
Realized		6.6	1.1
Unrealized portion recognized		54.8	45.4
		61.4	46.5
Pensions paid		(98.3)	(83.9)
Total assets at Dec. 31		\$2,071.8	\$1,891.9
Financial position—Dec. 31			
Investments		\$1,994.7	\$1,829.5
Other assets—net		77.1	62.4
Total assets		\$2,071.8	\$1,891.9
Liability to pensioners		\$ 720.0	\$ 580.4
Reserve for pensions to par- ticipants not yet retired		1,351.8	1,311.5
Liabilities and reserves		\$2,071.8	\$1,891.9

Provision for income taxes		<i>(In millions)</i>	
		1971	1970
U.S. Federal income taxes:			
Estimated amount payable		\$256.4	\$192.1
Effect of timing differences		19.9	(9.2)
Investment credit deferred—net		4.1	(6.4)
		280.4	176.5
Other income taxes and renegotiation		36.7	44.1
		\$317.1	\$220.6

(continued from page 26)

Employee compensation, including the cost of employee benefits, rose to a record level of \$3,885.3 million in 1971.

General Electric Company and its affiliates have a number of pension plans. Substantially all employees in the United States who have completed one year of service are participating in the General Electric Pension Plan, the obligations of which are funded through the General Electric Pension Trust. Trust financial statements appear at the left.

Investments of the Pension Trust are carried at amortized cost plus unrealized appreciation recognized.

The funding program in effect since 1967 uses 6% as the estimated rate of future income which includes a provision for the systematic recognition of a portion of the unrealized appreciation in the common stock portfolio. This program was revised in 1971 with the objective of recognizing appreciation which, when added to cost, will result in a book value approximating 80% of market value (consistent with revised Armed Services Procurement Regulations), compared with the 75% used previously. In addition, changes were made in actuarial assumptions relating to mortality to bring them in line with anticipated experience. The contribution to the Pension Trust would have been about the same had these largely offsetting changes not been made in 1971.

The actual earnings of the Trust, including the programmed recognition of appreciation, as a percentage of book value of the portfolio were 6.8% for 1971 and 6.3% for 1970.

Unfunded liabilities (including the liability for improvements effective on January 1, 1971) are being amortized over a 20-year period and are estimated to be \$325 million at December 31, 1971 based on the book value of Trust assets compared with \$70 million at the end of 1970. The unfunded vested liability was \$247 million at December 31, 1971 and \$6 million at December 31, 1970.

The estimated market value exceeded

the book value of Trust assets by \$443 million and \$360 million at the end of 1971 and 1970, respectively.

Depreciation amounted to \$273.6 million in 1971 compared with \$334.7 million in 1970. Depreciation expense for 1971 includes no counterpart for 1970 depreciation applicable to the information systems equipment business.

An accelerated depreciation method, based principally on a sum-of-the-years digits formula, is used to depreciate plant and equipment in the United States purchased in 1961 and subsequently. Assets purchased prior to 1961, and most assets outside the U.S., are depreciated on a straight-line basis. Special depreciation is provided where equipment may be subject to abnormal economic conditions or obsolescence.

Taxes, except those on income, totaled \$101.8 million in 1971 and \$88.8 million in 1970. These taxes were mainly franchise and property taxes. They exclude social security taxes which are included with employee benefits.

Interest and other financial charges decreased to \$96.9 million in 1971 from \$101.4 million in the previous year. Factors contributing to this decrease included the absence of borrowings by foreign affiliates of the transferred information systems equipment business as well as generally lower short-term rates which prevailed during the period. Partially offsetting the decrease was additional long-term borrowings in 1971, which accounted for an increase in interest and other financial charges applicable to principal items of long-term borrowings to \$40.8 million in 1971 from \$28.1 million in 1970.

Provision for income taxes amounted to \$317.1 million in 1971. Details of this amount are shown in the tabulation in the lower left margin.

Provision for U.S. Federal income

taxes, under the comprehensive interperiod tax allocation method, is based on the income and costs included in the earnings statement shown on page 27.

The amount of U.S. Federal income taxes shown payable is determined by applicable statutes and Government regulations. The amounts shown as timing differences result from the fact that under these statutes and regulations some items of income and cost are not recognized in the same time period as good accounting practice requires them to be recorded.

The cumulative net effect of such differences has been that earnings on which tax payments have been required have been more than the earnings reported in the Company's Annual Reports. Accordingly, a deferred-tax asset has been established to record the reduction of future tax payments.

Federal income taxes to be paid on undistributed earnings of foreign affiliates upon their transfer to domestic components are believed not to be significant.

U.S. Federal income tax returns of the Parent have been settled through 1960.

The Company follows the practice of adding the investment credit to income over the life of the underlying facilities rather than in the year in which facilities are placed in service. The investment credit was repealed during 1969 and reinstated during 1971. The investment credit amounted to \$12.2 million in 1971 compared with \$3.0 million in the prior year. In 1971, \$8.1 million was added to net earnings compared with \$9.4 million in 1970. At the end of 1971, the amount still deferred and to be included in net earnings in future years was \$47.7 million. If the Company had "flowed through" the investment credit, this amount would have been included in earnings during 1971 and prior years.

Renegotiation is a net provision for that portion of earnings on prime and subcontract sales to the U.S. Government which may later be claimed by the Government.

Interest of other share owners in net results of affiliates represents the minority interest which other share owners have in net earnings and losses of consolidated affiliates not wholly owned by the Company. Variances in this account between periods result not only from changes in earnings of affiliates but also from changes in General Electric's percent of ownership in these affiliates.

Cash and marketable securities totaled \$286.0 million at the end of 1971, an increase of \$80.2 million during the year. Marketable securities are carried at the lower of amortized cost or market value. Carrying value was substantially the same as market value.

Current receivables, less allowance for losses, totaled \$1,741.3 million at December 31, 1971. The increase of \$167.6 million or 11%, during the year, was due principally to the increase in sales in 1971. During 1970 receivables increased \$205.9 million as the result of a substantial increase in the volume of business at the end of 1970 compared with the strike-depressed volume at the end of 1969. Partially offsetting the 1970 increase was reduction of receivables applicable to information systems equipment business.

The allowance for losses applicable to current receivables amounted to \$47.4 million at December 31, 1971 and \$48.2 million at the end of 1970.

Long-term receivables, less allowance for losses, are reported under other assets.

Inventories are summarized at the right. Inventories at the end of 1971 were \$1,611.7 million compared with \$1,555.3 million at December 31, 1970. Inventories at the beginning of 1970 were \$1,590.7 million. The 1970 inventory decrease of \$35.4 million represented the reduction of inventories applicable to the information systems equipment business (\$131.4 million) partially offset by the balancing of inventory levels after the strike distorted

Inventories	(In millions)		
	December 31	1971	1970
Raw materials and work in process		\$1,002.5	\$ 967.2
Finished goods		505.4	491.6
Unbilled shipments		103.8	96.5
		<u>\$1,611.7</u>	<u>\$1,555.3</u>

Investments		<i>(In millions)</i>	
	December 31	1971	1970
Nonconsolidated finance affiliates		\$234.1	\$201.9
Honeywell Inc. and Honeywell Information Systems Inc.		195.3	216.7
Associated companies		21.7	20.9
Miscellaneous investments		274.3	201.8
Allowance for losses		(11.1)	(10.4)
		<u>\$714.3</u>	<u>\$630.9</u>

General Electric Credit Corporation		<i>(In millions)</i>	
Financial position			
	December 31	1971	1970
Cash and marketable securities	\$	80.0	\$ 73.2
Receivables		2,607.2	2,360.5
Deferred income		(289.0)	(250.1)
Reserves for losses		(56.2)	(41.5)
Net receivables		<u>2,262.0</u>	<u>2,068.9</u>
Other assets		16.7	14.9
Total assets		<u>\$2,358.7</u>	<u>\$2,157.0</u>
Notes payable:			
Due within one year		\$1,324.1	\$1,362.5
Long-term—Senior		415.2	280.3
—Subordinated		194.7	154.0
Other liabilities		192.8	170.2
Total liabilities		<u>2,126.8</u>	<u>1,967.0</u>
Capital stock		90.0	55.0
Retained earnings		141.9	135.0
Equity		<u>231.9</u>	<u>190.0</u>
Total liabilities and equity		<u>\$2,358.7</u>	<u>\$2,157.0</u>

Current and retained earnings			
	For the year	1971	1970
Earned income	\$	280.0	\$ 247.5
Expenses:			
Operating and administrative		83.1	71.7
Interest and discount		99.8	116.7
Provision for receivable losses		40.4	21.9
Provision for income taxes		25.8	17.3
		<u>249.1</u>	<u>227.6</u>
Net earnings		30.9	19.9
Deduct dividends		(24.0)	(15.0)
Retained earnings at January 1		135.0	130.1
Retained earnings at December 31	\$	<u>141.9</u>	<u>\$ 135.0</u>

condition at the beginning of 1970.

Inventories in the United States are substantially all valued on a last-in, first-out (LIFO) basis, and substantially all those outside the U.S. are valued on a first-in, first-out (FIFO) basis. Such valuations are not in excess of market and are based on cost, exclusive of certain indirect manufacturing expenses and profits on sales between the Parent and affiliated companies. The LIFO basis values inventories conservatively during inflationary times, and on a FIFO basis the year-end 1971 inventories would have been \$272.8 million in excess of this valuation. This excess increased \$27.6 million during 1971 and \$30.3 million during 1970.

Working capital (current assets less current liabilities) totaled \$798.6 million, an increase of \$114.1 million during 1971. The Statement of Changes in Financial Position on page 29 provides a summary of major sources and applications of funds as well as an analysis of changes in working capital.

Investments amounted to \$714.3 million at the end of 1971 as shown at upper left.

Investments in finance affiliates are carried at equity plus advances. Investment in General Electric Credit Corporation, a wholly-owned nonconsolidated finance affiliate, amounted to \$232.7 million at the end of 1971 and \$200.7 million at the end of 1970.

Condensed financial statements for the General Electric Credit Corporation and its consolidated affiliates are shown in the left margin. Copies of the 1971 Annual Report for the Credit Corporation may be obtained by writing to General Electric Credit Corporation, P.O. Box 8300, Stamford, Conn. 06904.

The Credit Corporation's net receivables rose to \$2,262.0 million at December 31, 1971, an increase of 9% during the year. Experience indicates that approximately 50% of the Credit Corporation's

receivables outstanding at December 31, 1971 would be collected within one year. The comparable percentage at the end of 1970 was 49%.

During February 1972 the Credit Corporation sold \$75.0 million of seven-year 7% notes in the public market.

During December 1971 the Credit Corporation issued preferred stock aggregating \$35.0 million to General Electric Company.

Investments in the securities of Honeywell Inc. and Honeywell Information Systems Inc. (HIS), a subsidiary of Honeywell, were recorded at appraised fair value at date of acquisition, October 1, 1970 when the information systems equipment business was transferred to HIS. The appraised fair value recognized such factors as the size of the holdings, the various requirements and restrictions on the timing of the sale or other dispositions of the securities, as well as the uncertainty of future events.

At December 31, 1970 these securities included 1,500,000 shares of Honeywell common stock; \$110.0 million principal amount of 9½% subordinated notes due 1975 and 1977 of Honeywell; and common shares representing an 18½% ownership in HIS. The Honeywell common stock, based on the closing market price at December 31, 1970, would have been valued at \$124.5 million.

During June 1971 General Electric sold 375,000 shares of Honeywell common stock. In June 1971 Honeywell gave notice of the exercise of its option to prepay the \$110.0 million of subordinated notes through the issuance to General Electric of 1,025,432 shares of Honeywell common stock. The shares received are carried at amounts assigned to the notes thus redeemed including interest imputed during the period held.

At December 31, 1971, General Electric held 2,150,432 shares of Honeywell common stock. Based on the closing market price on December 31, 1971, these shares would have been valued at \$286.8 million.

The Company continued to hold the 18½% ownership in HIS.

During 1975 through 1980, Honeywell has the option to purchase from General Electric, and General Electric has the option to require Honeywell to purchase, General Electric's interest in HIS. Payment would be in Honeywell common stock. General Electric has agreed that if the U. S. Attorney General so requests, it shall, prior to the end of 1980, exercise its option to require Honeywell to purchase General Electric's interest in HIS. General Electric has committed to the United States Department of Justice to dispose of current holdings of Honeywell common stock in stages by June 30, 1978, and all other shares of Honeywell common stock received for General Electric's interest in HIS by December 31, 1980.

A voting trust has been established in which General Electric must deposit all shares of Honeywell common stock received as part of this transaction.

Investments in associated companies which are not consolidated but in which the Company owns approximately 50% of the voting stock are valued at cost adjusted for changes in equity since acquisition.

Miscellaneous investments are valued at cost. On December 31, 1971, the estimated realizable value of these investments was approximately \$320 million, an increase of \$90 million during the year.

Plant and equipment represents the original cost of land, buildings and equipment less estimated cost consumed by wear and obsolescence.

Details of plant and equipment, and accumulated depreciation, are shown in the table at upper right. Dispositions during 1970 included amounts applicable to the transfer of the information systems equipment business.

Other assets, less allowance for losses of \$14.6 million (\$12.4 million at December 31, 1970), totaled \$508.8 million at De-

cember 31, 1971. Research and development expenditures, except those specified as recoverable design costs on Government contracts, are charged to operations as incurred. Deferred income taxes applicable to current assets and liabilities were \$80.8 million at the end of 1971 compared with \$78.4 million at the end of 1970.

Other assets are summarized in the right margin.

Short-term borrowings, those due within one year, totaled \$569.8 million at the end of 1971 compared with \$658.1 million at the end of the preceding year. These borrowings have been incurred by the Company primarily to finance increased working capital requirements and a continuing high level of expenditures for plant and equipment. Short-term borrowings by the Parent aggregated \$396.1 million at the end of 1971, a decrease of \$86.7 million during the year. Borrowings by the Company's foreign affiliates decreased significantly in 1970 principally because of the transfer of the information systems equipment business.

Other costs and expenses accrued at the end of 1971 included compensation and benefit costs accrued of \$313.3 million and interest expense accrued of \$15.5 million. At the end of 1970, compensation and benefit costs accrued were \$263.8 million and interest expense accrued was \$11.2 million. The remaining costs and expenses accrued included liabilities for items such as replacements under guarantees and allowances to customers.

Long-term borrowings amounted to \$787.3 million at December 31, 1971 compared with \$573.5 million at the end of 1970 as summarized at the right.

During March 1971, the Company issued \$200.0 million of 7½% Debentures due in 1996. The net proceeds of this offering were added to the general funds of the Company and initially used to reduce short-term borrowings.

Plant and equipment		<i>(In millions)</i>	
	1971	1970	
Major classes at Dec. 31:			
Land and improvements	\$ 100.9	\$ 87.2	
Buildings, structures and related equipment	1,243.3	1,070.2	
Machinery and equipment	2,585.5	2,294.9	
Leasehold costs and plant under construction	204.5	199.2	
	<u>\$4,134.2</u>	<u>\$3,651.5</u>	
Cost at Jan. 1	\$3,651.5	\$3,982.1	
Additions	553.1	581.4	
Dispositions	(70.4)	(912.0)	
Cost at Dec. 31	<u>\$4,134.2</u>	<u>\$3,651.5</u>	
Accumulated depreciation			
Balance at Jan. 1	\$1,902.1	\$2,167.1	
Current year provision	273.6	334.7	
Dispositions	(62.5)	(540.5)	
Other changes	(4.7)	(59.2)	
Balance at Dec. 31	<u>\$2,108.5</u>	<u>\$1,902.1</u>	
Plant and equipment less depreciation at Dec. 31	<u>\$2,025.7</u>	<u>\$1,749.4</u>	

Other assets		<i>(In millions)</i>	
December 31	1971	1970	
Long-term receivables	\$173.5	\$147.8	
Deferred income taxes	106.2	120.0	
Recoverable design costs on Government contracts	95.4	99.7	
Customer financing	61.9	54.9	
Deferred charges	23.7	22.1	
Loans and advances to employees	9.6	9.0	
Other	38.5	29.9	
	<u>\$508.8</u>	<u>\$483.4</u>	

Long-term borrowings		<i>(In millions)</i>	
December 31	1971	1970	
General Electric Company:			
7½ % Debentures	\$200.0	\$ —	
5.30% Debentures	178.9	185.6	
5¾ % Notes	118.8	125.0	
3½ % Debentures	102.3	113.1	
General Electric Overseas Capital Corporation			
	135.1	111.6	
Other	52.2	38.2	
	<u>\$787.3</u>	<u>\$573.5</u>	

General Electric Company 5.30% Sinking Fund Debentures are due in 1992. Sinking fund payments are required beginning in 1973. Debentures outstanding at the end of 1971 amounted to \$178.9 million after deduction of reacquired debentures with a face value of \$21.1 million held in treasury for future sinking fund requirements.

General Electric Company 5¾% Notes are due in 1991. At December 31, 1971, \$118.8 million was classified as long term and \$6.2 million was classified as short term. Mandatory prepayments are required beginning in 1972.

General Electric Company 3½% Debentures are due in 1976. Debentures having a face value of \$15.5 million, and reacquired at a cost of \$13.0 million, were retired during 1971 in accordance with sinking fund provisions. Debentures outstanding at the end of 1971 amounted to \$102.3 million after deduction of reacquired debentures with a face value of \$42.6 million held in treasury for future sinking fund requirements.

General Electric Overseas Capital Corporation (a wholly-owned consolidated affiliate) borrowings are unconditionally guaranteed by General Electric Company as to payment of principal, premium, if any, and interest. Proceeds from these borrowings are being used primarily to assist in financing the capital requirements of foreign companies in which General Electric has an equity interest. The borrowings include the Corporation's 4¼% Guaranteed Bonds Due 1985 in the aggregate principal amount of \$50.0 million. The bonds are convertible through November 1975, into General Electric common stock at \$65.50 a share. Sinking fund payments on any bonds not converted are required beginning in 1976.

Other long-term borrowings represented largely borrowings by foreign affiliates with various interest rates and maturities. These borrowings decreased significantly during 1970 primarily by amounts borrowed by the overseas com-

ponents of the transferred information systems equipment business.

During January 1972, General Electric Company sold \$125.0 million of 6¼% Debentures due in 1979 in the public market, the net proceeds of which were added to the general funds of the Company.

Preferred stock, \$1.00 par value, up to a total of 2,000,000 shares has been authorized by the share owners. No preferred shares have been issued.

Common stock, \$2.50 par value, up to a total of 210,000,000 shares has been authorized by the share owners. During April 1971 share owner approval was obtained to split common shares on a two-for-one basis. This resulted in an increase in the number of authorized shares of common stock from 105,000,000 shares with a par value of \$5.00 per share to 210,000,000 shares with a par value of \$2.50 per share and a doubling of all issued common shares including stock held in treasury. The split resulted in no change in the capital or surplus accounts of the Company. Shares issued and outstanding at the end of the last two years are shown at lower left. The number of new shares issued varies between periods depending on the requirements of employee plans and the timing of deliveries of shares under provisions of those plans.

Common stock held in treasury for various corporate purposes totaled \$125.5 million at the close of 1971 and \$111.4 million at the end of 1970. Purchases during 1971 totaled 759,048 shares including 504,076 shares acquired from employees at current market prices pursuant to provisions in employee plans other than stock option plans. Other purchases were primarily through regular transactions in the security markets. Treasury stock dispositions are at the upper right on page 35.

The Company held under the deferred compensation provisions of incentive compensation plans a total of 1,094,169 shares

Common stock issued and outstanding

	1971	1970
Shares issued at Jan. 1	184,370,136	183,462,632
New shares issued:		
Savings and Security Program	327,590	830,184
Stock option plans	238,592	77,320
Shares issued at Dec. 31	184,936,318	184,370,136
Deduct shares held in treasury	(2,813,503)	(2,743,122)
Shares outstanding at Dec. 31	<u>182,122,815</u>	<u>181,627,014</u>

at December 31, 1971 and 1,041,472 shares at December 31, 1970. These shares are recorded at market value at the time of their allotment. The liability is recorded under other liabilities.

The remaining common stock held is carried at cost, \$80.5 million at the end of 1971 and \$70.8 million at the end of 1970. These shares are held for future corporate requirements including 763,359 shares for possible conversion of General Electric Overseas Capital Corporation's 4¼% Guaranteed Bonds described under long-term borrowings, for distributions under employee savings plans and for incentive compensation awards.

Amounts in excess of par value received for stock increased \$38.8 million during 1971 resulting from amounts received for newly-issued shares in excess of par value of \$29.0 million and net gains from treasury stock transactions of \$9.8 million. The increase during 1970 of \$29.7 million resulted from amounts received for newly-issued shares in excess of par value of \$34.8 million reduced by net losses from treasury stock transactions of \$5.1 million.

Incentive compensation plans provide incentive for outstanding performance by over 3,000 key employees. Allotments

made in 1971 for services performed in 1970 aggregated \$20.0 million. Allotments made in 1970 for services performed in 1969 totaled \$16.4 million.

The Stock Option Plan, approved by the share owners in 1968 by 98.2% of the votes cast, and three previous similar plans, provided continuing incentive for more than 500 employees. The option price under these plans is the full market value of General Electric common stock on the date of grant. Therefore, participants in the plans do not benefit unless the stock's market price rises, thus benefiting all share owners. Also, in order to exercise options the employee must remain with the Company, because options may be exercised only after annual installments mature, which is generally over a period of nine years. Thus the plans encourage managers and professional employees to have the long-term entrepreneurial interest that will benefit all share owners.

A summary of stock option transactions during the last two years is shown at the right. At the end of 1971, there were 2,934,520 shares reserved for options of which 837,623 shares were exercisable, 1,551,308 shares were not yet exercisable and 545,589 shares were available for granting options in the future.

Dispositions of treasury shares

	1971	1970
Employee savings plans	572,336	994,752
Incentive compensation plans	94,788	113,238
Business acquisitions	21,416	—
Awards to employees	127	360
	<u>688,667</u>	<u>1,108,350</u>

Stock options

		Average per share	
	Number of shares	Option price	Market price
Balance at Dec. 31, 1969	1,981,976	\$44.28	\$38.75
Options granted	689,778	43.13	43.13
Options exercised	(77,320)	39.40	43.16
Options terminated	(138,638)	44.58	—
Balance at Dec. 31, 1970	2,455,796	44.09	46.94
Options granted	243,001	56.50	56.50
Options exercised	(238,592)	40.29	58.26
Options terminated	(71,274)	44.67	—
Balance at Dec. 31, 1971	<u>2,388,931</u>	45.70	62.62

Report of Independent Certified Public Accountants

To the share owners and board of directors of General Electric Company

We have examined the statements of financial position of General Electric Company and consolidated affiliates as of December 31, 1971 and 1970, and the related statements of current and retained earnings and changes in financial position for the respective years then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, such statements present fairly the financial position of General Electric Company and consolidated affiliates at December 31, 1971 and 1970, and the results of their operations and changes in financial position for the respective years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Peat, Marwick, Mitchell & Co.

Peat, Marwick, Mitchell & Co., 345 Park Avenue, New York, New York 10022

Ten Year Summary

On worldwide basis of consolidation	(Dollar amounts in millions; per-share amounts in dollars)						
	1971	1970	1969	1968	1967	1966	1965
Sales of products and services	\$9,425.3	\$8,726.7	\$8,448.0	\$8,381.6	\$7,741.2	\$7,177.3	\$6,213.6
Net earnings ^(a)	471.8	328.5	278.0	357.1	361.4	338.9	355.1
Earnings per common share ^(b)	2.60	1.81	1.54	1.98	2.00	1.88	1.97
Earnings as a percentage of sales ^(a)	5.0%	3.8%	3.3%	4.3%	4.7%	4.7%	5.7%
Earnings on share owners' equity ^(c)	17.6%	13.2%	11.5%	15.4%	16.5%	16.2%	18.0%
Earnings retained for reinvestment ^(a)	222.1	93.1	42.8	122.3	127.2	104.3	138.4
Cash dividends declared	\$ 249.7	\$ 235.4	\$ 235.2	\$ 234.8	\$ 234.2	\$ 234.6	\$ 216.7
Dividends declared per common share ^(b)	1.38	1.30	1.30	1.30	1.30	1.30	1.20
Shares outstanding—average (In thousands) ^(b)	181,684	181,114	180,965	180,651	180,266	180,609	180,634
Share owner accounts—average	523,000	529,000	520,000	530,000	529,000	530,000	521,000
Market price range per share ^{(b)(d)}	66½-46½	47¼-30½	49⅛-37	50¼-40⅛	58-41¼	60-40	60⅛-45½
Current assets	\$3,639.0	\$3,334.8	\$3,287.8	\$3,311.1	\$3,207.6	\$3,013.0	\$2,842.4
Current liabilities	2,840.4	2,650.3	2,366.7	2,104.3	1,977.4	1,883.2	1,566.8
Total assets ^(c)	6,887.8	6,198.5	5,894.0	5,652.5	5,250.3	4,768.1	4,241.5
Share owners' equity ^(c)	2,801.8	2,553.6	2,426.5	2,402.1	2,245.3	2,128.1	2,048.1
Plant and equipment additions	\$ 553.1	\$ 581.4	\$ 530.6	\$ 514.7	\$ 561.7	\$ 484.9	\$ 332.9
Depreciation	273.6	334.7	351.3	300.1	280.4	233.6	188.4
Provision for income taxes	317.1	220.6	231.5	312.3	320.5	347.4	352.2
Worldwide employees—average	363,000	397,000	410,000	396,000	385,000	376,000	333,000

(a) See special note to share owners on page 2.

(b) Amounts have been adjusted for the two-for-one stock split in April 1971.

(c) Years prior to 1971 have been restated to the current practice for recording common stock held in treasury.

(d) Represents high and low market price on New York Stock Exchange for each year.

Directors

1964	1963	1962
\$5,319.2	\$5,177.0	\$4,986.1
219.6	272.2	256.5
1.22	1.52	1.44
4.1%	5.3%	5.1%
11.7%	15.3%	15.4%
21.9	89.1	79.0
\$ 197.7	\$ 183.1	\$ 177.5
1.10	1.02	1.00
179,833	178,768	177,605
516,000	504,000	447,000
46 $\frac{3}{4}$ -39 $\frac{3}{8}$	43 $\frac{3}{4}$ -35 $\frac{7}{8}$	39 $\frac{1}{4}$ -27 $\frac{1}{8}$
\$2,543.8	\$2,321.0	\$2,024.6
1,338.9	1,181.9	1,168.7
3,788.2	3,457.8	3,308.0
1,896.4	1,844.5	1,722.4
\$ 237.7	\$ 149.2	\$ 173.2
170.3	149.4	146.0
233.8	286.7	254.0
308,000	298,000	291,000

The election of two Company officers and one "outside" director to the Board of Directors in 1971 brought total membership to 21. The Board lost the services of Robert T. Stevens, who had served with great distinction for over 21 years, when he did not stand for reelection under the age rule established by the Board in 1956.

Board members are listed below with their principal affiliations and years of service as General Electric Directors. Their average age is 59 years and average length of service on the Board is 10 years.

J. Paul Austin, Chairman of the Board and Director, The Coca-Cola Company, Atlanta, Ga. (8 years)

Fred J. Borch, Chairman of the Board and Chief Executive Officer, General Electric Company, New York City. (10 years)

James G. Boswell II, President, J. G. Boswell Company, Los Angeles, Cal. (Elected November 1971)

Walter D. Dance, Vice Chairman of the Board and Executive Officer, General Electric Company, New York City. (Elected August 1971)

William H. Dennler, Vice Chairman of the Board, Executive Officer and Consultant to the Chairman, General Electric Company, New York City. (3 years)

Frederick B. Dent, President and Director, Mayfair Mills, Arcadia, S. C. (6 years)

Thomas S. Gates, Director, J. P. Morgan & Co., Inc. and Morgan Guaranty Trust Company of New York, New York City. (7 years)

Frederick L. Hovde, President Emeritus, Purdue University, Lafayette, Ind. (16 years)

Gilbert W. Humphrey, Chairman of the Board and Director, The Hanna Mining Company, Cleveland, Ohio. (17 years)

Reginald H. Jones, Vice Chairman of the Board and Executive Officer, General Electric Company, New York City. (Elected August 1971)

John E. Lawrence, Proprietor, James Lawrence & Co., Boston, Mass. (15 years)

Ralph Lazarus, Chairman of the Board and Director, Federated Department Stores, Inc., Cincinnati, Ohio. (9 years)

Edmund W. Littlefield, Chairman of the Board and Director, Utah International Inc., San Francisco, Cal. (8 years)

George H. Love, Chairman of the Board and Director, Consolidation Coal Company, Pittsburgh, Pa. (22 years)

Neil H. McElroy, Chairman of the Executive Committee and Director, The Procter & Gamble Company, Cincinnati, Ohio. (20 years)

Dean A. McGee, Chairman of the Board and Director, Kerr-McGee Corporation, Oklahoma City, Okla. (10 years)

Henry S. Morgan, Limited Partner, Morgan Stanley & Co., New York City. (32 years)

Jack S. Parker, Vice Chairman of the Board and Executive Officer, General Electric Company, New York City. (3 years)

Gilbert H. Scribner, Jr., President and Director, Scribner and Co., Chicago, Ill. (9 years)

Herman L. Weiss, Vice Chairman of the Board and Executive Officer, General Electric Company, New York City. (3 years)

Walter B. Wriston, Chairman and Director, First National City Bank, New York City. (10 years)

Charles E. Wilson, who served as a Director from 1938 to 1942 and from 1944 to 1950, died on January 3, 1972 at the age of 85. General Electric people deeply regret the passing of the man who, in 1940, became the Company's fourth president, climaxing a GE career that had begun as an office boy in 1899. On two occasions he interrupted his General Electric service in order to serve his country. During World War II he was Vice Chairman of the War Production Board and during the Korean conflict served as Director of the Office of Defense Mobilization. He will be warmly remembered for his national contributions in mobilizing the resources of industry to his country's needs, as well as for the unflagging enthusiasm he brought to the progress of your Company.

Management

Corporate Executive Office

Fred J. Borch
Chairman of the Board
and Chief Executive Officer

Walter D. Dance
Vice Chairman of the Board
and Executive Officer

William H. Dennler*
Vice Chairman of the Board
Executive Officer and
Consultant to the Chairman

Senior Vice Presidents

Hershner Cross
Senior Vice President
Corporate Executive Staff

Oscar L. Dunn
Senior Vice President
Corporate Executive Staff

Robert M. Estes
Senior Vice President
Corporate Executive Staff
General Counsel and Secretary

Vice Presidents and Group Executives

Stanley C. Gault
VP and Group Executive
Major Appliance Group

Reuben Gutoff
VP and Group Executive
Components and Materials Group

Edward E. Hood, Jr.
VP and Group Executive
International Group

Robert B. Kurtz
VP and Group Executive
Construction Industries Group

Mark Morton
VP and Group Executive
Aerospace Group

Corporate Staff Officers

Arthur M. Bueche
VP—Research and Development

John F. Burlingame
VP—Corporate Employee Relations

L. Berkley Davis
VP—Washington Corporate Office

Virgil B. Day
VP and Staff Executive
Business Environment

Edward H. Malone
VP—Trust Operations

John B. McKitterick
VP and Staff Executive
Planning Development

Halbert B. Miller
VP and Staff Executive
Production Resources

Douglas S. Moore
VP—Corporate Public Relations

L. William Ballard, Jr.
Regional VP—Central

Lester W. Dettman
Regional VP—East Central

Thomas K. Edenfield
Regional VP—Southeastern

William B. Frogue
Regional VP—Southwestern

Harry P. Gough
Regional VP—Mid-States

Operations

Aerospace Group

Roy H. Beaton
VP and General Manager
Electronic Systems Division
David Cochran
VP and General Manager
Aerospace Programs
Relations Division
Daniel J. Fink
VP and General Manager
Space Division
Charles W. George
VP and General Manager
Aircraft Equipment Division
Otto Klima
VP and General Manager
Re-entry & Environmental
Systems Division

Aircraft Engine Group

Frederick W. Garry
VP and General Manager
Military Engine
Projects Division
Gerhard Neumann
Acting General Manager
Commercial Engine
Projects Division
Fred O. MacFee, Jr.
VP—Group
Strategic Planning Operation
Louis V. Tomasetti
VP and General Manager
Group Manufacturing Division
Edward Woll
VP and General Manager
Group Engineering Division

Components and Materials Group

Julien R. Charlier
VP and General Manager
Medical Systems Division
Fred H. Holt
VP and General Manager
Appliance Components Division
Thomas A. Vanderslice
VP and General Manager
Electronic Components Division
John F. Welch, Jr.
VP and General Manager
Chemical and Metallurgical Division

Construction Industries Group

Kristian H. Christiansen
VP and General Manager
Agency and Distributor Sales Division
Ralph B. Glotzbach
VP and General Manager
General Electric Supply Company
Division
Robert B. Kurtz
Acting General Manager
Contractor Equipment Division
Howard F. McCullough
VP and General Manager
Construction Materials Division
J. Herbert Smith
Chairman of the Board
and Chief Executive Officer
Canadian General Electric
Company Limited (an affiliate
of General Electric)
Walter G. Ward
President
Canadian General Electric
Company Limited

Consumer Products Group

John S. Chamberlin
General Manager
Housewares Division
Robert V. Corning
VP and General Manager
Lamp Division
Donald E. Perry
VP and General Manager
Home Entertainment Division
Charles G. Klock
President and General Manager
General Electric
Credit Corporation
(an affiliate of General Electric)
Thomas W. Moore
President
Tomorrow Entertainment, Inc.
(an affiliate of General Electric)

The organizational listing on these pages includes changes approved by the Board of Directors on February 18, 1972, to become effective March 1, 1972.

*Retiring under the provisions of the Company's Pension Plan on May 1, 1972.

Reginald H. JonesVice Chairman of the Board
and Executive Officer**Jack S. Parker**Vice Chairman of the Board
and Executive Officer**Herman L. Weiss**Vice Chairman of the Board
and Executive Officer**Charles E. Reed**Senior Vice President
Corporate Executive Staff**J. Stanford Smith**Senior Vice President
Corporate Administrative Staff**Gerhard Neumann**VP and Group Executive
Aircraft Engine Group**Thomas O. Paine**VP and Group Executive
Power Generation Group**Arthur E. Peltosalo**VP and Group Executive
Power Delivery Group**Clement E. Sutton, Jr.**VP and Group Executive
Industrial Group**Hicks B. Waldron**VP and Group Executive
Consumer Products Group**Willis E. Forsyth**

VP and Comptroller

Roy L. JohnsonVP and Staff Executive
Executive Manpower**Robert W. Lewis**

VP—Corporate Headquarters Project

Leonard C. Maier, Jr.

VP—Corporate Consulting Services

Walter A. Schlatterbeck

VP and Corporate Counsel

J. Stanford SmithActing Manager
Corporate Facilities Services**Paul E. Wallendorf**

VP and Treasurer

James F. YoungVP and Staff Executive
Technical Resources**Harry M. Lawson**

Regional VP—Western

Donald D. Scarff

Regional VP—Atlantic

Steven C. Van Voorhis

Regional VP—Northeastern

Cecil S. Semple

Commercial VP

Industrial Group**S. Wellford Corbin**VP and General Manager
Industrial Sales Division**George J. Feeney**General Manager—Information
Services Division**Richard P. Gifford**VP and General Manager
Communication Systems Division**Howard D. Kurt**

VP—Consultant

Bruce O. RobertsVP and General Manager
AC Motor and Generator Division**Peter C. Van Dyck**VP and General Manager
Apparatus Service Division**Louis E. Wengert**VP and General Manager
Automation Division**George B. Woods**

VP—Consultant

Bryce W. WymanVP and General Manager
Transportation Systems Division**International Group****Marshall Bartlett, Jr.**VP and General Manager
Europe Division**William L. Lurie**VP and General Manager
International Support Division**J. Russell Mudge**VP and General Manager
Far East Division**Hoyt P. Steele**VP and General Manager
International Sales Division**Russell E. Whitmyer**VP and General Manager
Latin America Division**Major Appliance Group****Arthur E. Andres**VP and General Manager
Contract Sales Division**William B. Clemmens**VP and General Manager
Retail Sales Division**Robert R. Frederick**VP and General Manager
Home Laundry Division**Joseph H. Gauss**VP and General Manager
Air Conditioning Division**Irving L. Griffin**VP and General Manager
Refrigerator Division**Donald W. Lynch**VP and General Manager
Kitchen Appliance Division**Lester E. Pankonin**VP and General Manager
Distribution Finance
and Service Division**Edward L. Stehle**VP and General Manager
Customer Relations and Sales
Support Operation**Power Delivery Group****Christy W. Bell**

VP—Consultant

Charles J. MelounVP and General Manager
Transformer and Distribution
Equipment Division**A. Eugene Schubert**VP—Group Strategic Planning
and Review Operation**William R. Smart**VP and General Manager
Switchgear Equipment Division**William R. Tackaberry**VP and General Manager
Power Transmission and
Distribution Sales Division**Power Generation Group****Donald E. Craig**VP and General Manager
Steam Turbine-Generator Division**Herman R. Hill**

VP—Group

Strategic Planning Operation

Milton F. KentVP and General Manager
Power Generation Sales Division**Whitman Ridgway**VP and General Manager
Gas Turbine Division**George J. Stathakis**VP and General Manager
Nuclear Energy Division**Edward C. Clark**Deputy Division General Manager
Steam Turbine-Generator Division**John D. Selby**Deputy Division General Manager
Nuclear Energy Division

INVESTOR

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This 1971 Annual Report is one of four quarterly issues of *The General Electric Investor*, published to inform share owners and investors about activities of the General Electric Company. Others may receive the *Investor* on request.

EDITOR: Frederick N. Robinson

ASSOCIATE EDITOR: David L. Martin

FINANCIAL EDITOR: Sidney D. Spencer

EDITORIAL BOARD: David W. Burke, *Manager, Public Relations Programs*;

J. Hervie Hauffer, *Manager, Corporate Editorial Communications*;

Gregory M. Sheehan, *Manager, Investor Relations Operation*.



New from General Electric: complete commuter cars. Above: New car for New York's Metropolitan Transportation Authority.